

Interoffice Memo Office of Design Policy & Support

DATE: 10/23/2020

FILE: P.I.# 0013733

Douglas County / GDOT District 7 - Metro Atlanta SR 5/US78 @ SR 6/ US278 - Intersection Improvement

Dane Peters

FROM: R. Christopher Rudd, PE, State Design Policy Engineer

TO: SEE DISTRIBUTION

SUBJECT: APPROVED CONCEPT REPORT

Attached is the approved Concept Report for the above subject project.

Attachment

Distribution:

Hiral Patel, Director of Engineering

Joe Carpenter, Director of P3

Albert Shelby, Director of Program Delivery

Carol Comer, Director, Division of Intermodal

Darryl VanMeter, Assistant Director of P3/State Innovative Delivery Administrator

Matthew Markham, Deputy Director of Planning

Kim Nesbitt, Program Delivery Administrator

Bobby Hilliard, Program Control Administrator

Eric Duff, State Environmental Administrator

Andrew Heath, State Traffic Engineer

Angela Robinson, Financial Management Administrator

Erik Rohde, State Project Review Engineer

Monica Flournoy, State Materials Engineer

Patrick Allen, State Utilities Engineer

Eric Conklin, State Transportation Data Administrator

Attn: Systems & Classification Branch

Benny Walden, Statewide Location Bureau Chief

Andy Casey, State Roadway Design Engineer

Attn: Steven Boockholdt, Design Group Manager

Ed David Adams, State Safety Program Manager

Kathy Zahul, District Engineer

Paul DeNard, District Preconstruction Engineer

Shun Pringle, District Utilities Manager

Obi Ezenekwe, Project Manager

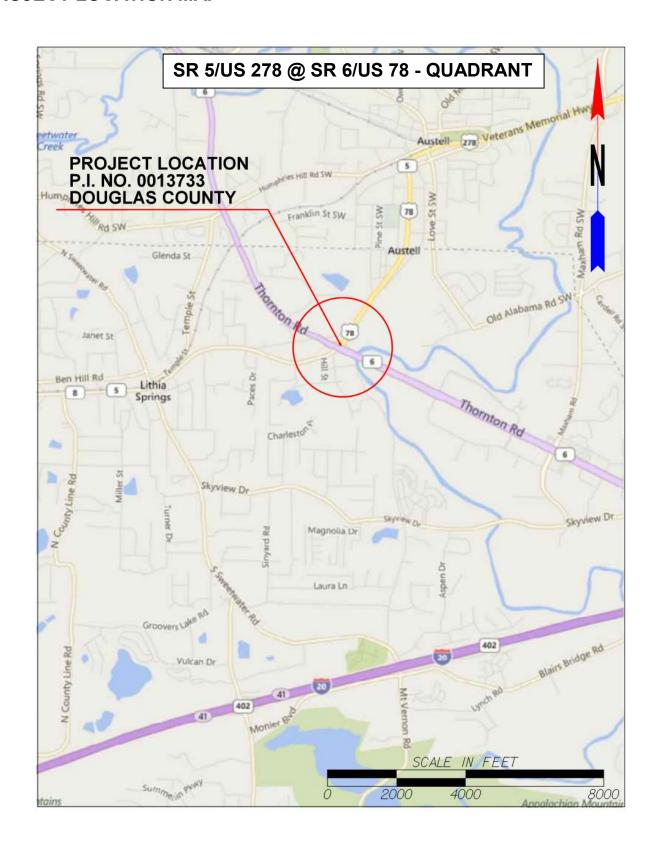
BOARD MEMBER - 13th Congressional District



Project Concept Report

Project Type:	Intersection Improvement	P.I. Number:	0013733
GDOT District:	7	County:	Douglas
Federal Route Number:	78/278	State Route Number:	5/6
Project Number:	N/A		
This project proposes a Quadra SR 6/US 278 in Douglas Count		ve capacity at the intersec	ction of SR 5/US 78 @
Submitted for approval:	C. Andry Can	Concept Report up	odated 10/1/2020 5-26-20
State Roadway Design Enginee	C. Andry Can	W. Modelt	Date 5/27/2020
State Program Delivery Adminis			Date
Dal liking	THERE	(280)	5/26/20
GDOT Project Manager			Date
Recommendation for approval	. * Recommendat	ions are on file	~OB
* Eric Duff			5/28/2020
State Environmental Administra	ator		Date
* Chris Raymond			6/11/2020
or State Traffic Engineer			Date
* Josh Taylor			7/8/2020
or Project Review Engineer			Date
* Marcela Coll			6/4/2020
State Utilities Engineer			6/4/2020 Date
* Paul DeNard			6/11/2020
for District Engineer			Date
Range Transportation F	t is consistent with the goals ou	itlined in the Statewide Tra	, , ,
and/or is included in the	e State Transportation Improv	ement Program (STIP).	0.5.00
	for		6-5-20
State Transportation Planning A			Date
* Recommendation	ns were also receive	ed from the follo	owing:
Office of Materials Office of Intermod	: Monica Flournoy lal: Alan Hood	5/29/2020 6/9/2020	-

PROJECT LOCATION MAP



Project Concept Report – Page 3 P.I. Number: 0013733

County: Douglas

PLANNING AND BACKGROUND

Prepared By: Office of Planning Date: 7/6/2020

Project Justification Statement:

The purpose of this project is to improve operations, and address current and future mobility concerns and needs at the intersection of State Route (SR) 5/US 78 and SR 6/US 278. SR 6, a four lane roadway, is functionally classified as an urban principal arterial. SR 5, also a four lane facility, is functionally classified as an urban minor arterial. In addition to the functional classification, SR 6 was also identified in the ARC Strategic Thoroughfare Plan as a Regional Thoroughfare on the designated Regional Transportation Network. This network includes the most critical surface roadways in the region. SR 6 is also listed as a Connector in the Atlanta Strategic Truck Route Master Plan (ASTRoMaP).

The intersection is currently signalized, with dedicated left turn lanes and channelized right turn lanes. There are intermittent sidewalks along SR 5/US 78 and no pedestrian treatments on SR 6/US 278. There are marked pedestrian crossings at the intersection. There are numerous driveways providing access into the adjacent businesses in three of the four intersection quadrants. These driveways are located approximately 200-300 feet from the intersection which contributes to weaving movements from vehicles entering and exiting the driveways.

In 2008, the Atlanta Regional Commission (ARC) completed a SR 6 transportation corridor study which identified the need for operational improvements at this intersection. In 2015, GDOT's Office of Planning completed the SR 6 Access Management Plan. This study identified the need for safety and operational improvements to the intersection and recommended the improvements include an alternative intersection design. The project location is shown in Figure 1.

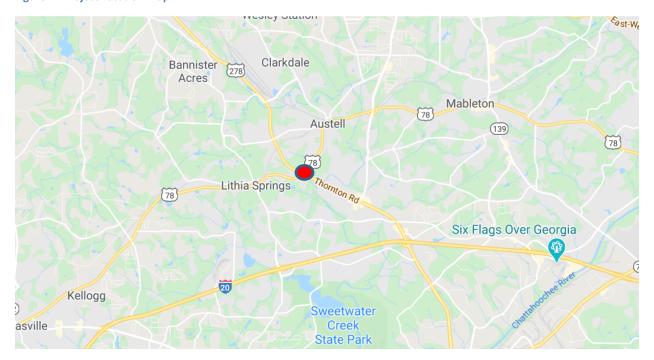


Figure 1. Project Location Map

According to the Traffic Analysis and Data Applications (TADA), the 2018 average Annual Daily Traffic (AADT) on SR 5 and SR 6 was 18,700 and 43,800 respectively. SR 5 truck percentage is approximately 5% and the SR 6 truck percentage is approximately 11%. The 2018 level of service (LOS) for SR 5 and SR 6 is E. By 2050, the projected volumes of the roadways using a growth rate of 1.05 exceeds the threshold of a 4-lane capacity and therefore is expected to operate at a LOS of F.

Project Concept Report – Page 4 County: Douglas

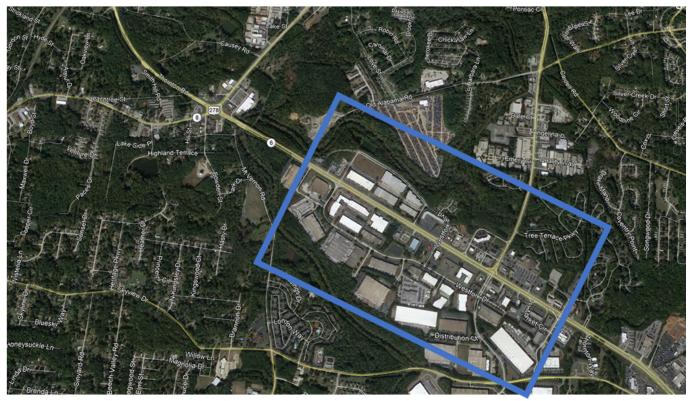
County: Douglas

The development in each of the quadrants of the intersection is light commercial, including auto dealers, retail, and

P.I. Number: 0013733

The development in each of the quadrants of the intersection is light commercial, including auto dealers, retail, and services. Slightly further southeast along SR 6, approximately 0.60 miles, there is a concentration of heavy commercial, warehousing and distribution centers, and manufacturing uses. These uses contribute directly to the higher truck volume percentage along SR 6. The nearby developments and the proximity to the proposed project area are shown in Figure 2.

Figure 2. Adjacent Land Uses



Source: Google Earth

Crash rates for the primary corridor SR 6 is lower than the statewide averages for urban principal arterials. For 2015-2018, crash rates per million vehicle miles (MVM) were 438, 395, 406 respectively compared to statewide averages of 628, 615, and 581 for urban principal arterials. There were no fatalities reported. Rear-end crashes accounted for 55% of all crashes at this intersection. Rear-end crashes are commonly associated with congestion. Angle crashes accounted for 25% of the crashes followed by 13% of crashes accounting from sideswipes. Angle crashes are commonly associated with turning movements, while sideswipes are associated with both turning movements and congestion. Table 1 displays the crash data along SR 6.

Table 1. Crash Data

Year	Property	Rate	Injury	Rate	Fatality	Rate	Rate	Statewide
		(MVM)		(MVM)		(MVM)	(MVM)	Average Rate (MVM)
2016	110	317	42	121	0	0	438	628
2017	100	288	37	107	0	0	395	615
2018	116	334	25	72	0	0	406	581

Project Concept Report – Page 5

County: Douglas

Other programmed projects in the vicinity of this project include: safety and traffic flow improvements on Maxham Road from SR 6 to Tree Terrace Pkwy (P.I. No. 0012621) and truck friendly lanes on SR 6 from I-20 westbound to SR 6 Spur (P.I. No. 0010821).

P.I. Number: 0013733

This project is justified by the need to improve current and future traffic mobility needs, reduce congestion, reduce the frequency of crashes, and improve operations for trucks and passenger vehicles. These improvements will address the major performance goal of addressing capacity and congestion issues with an additional benefit of addressing safety.

Existing conditions:

Currently, SR 6/US 278 has 7 total 12-ft lanes with a raised median east of the SR 5/SR 6 intersection consisting of 2 thru lanes traveling westbound, 3 thru lanes traveling eastbound and turning lanes on both approaches. SR 6/US 278 has 5 total 12-ft lanes west of the SR 5/SR 6 intersection consisting of 1 thru and 1 thru/right-turn traveling eastbound with turn lanes and 2 thru lanes traveling westbound. There is curb and gutter along each side and approach of SR 6 with no sidewalks. SR 6 consists of Structure ID 097-0006-0 which is a bridge crossing over Sweetwater Creek.

SR 5/US 78 has 5 total 12-ft lanes south of the SR 5/SR 6 intersection consisting of 1 thru and 1 thru/right-turn lane traveling northbound with turning lanes and 2 thru lanes traveling southbound. SR 5/US 78 has 5 total 12-ft lanes north of the intersection of SR 5/SR 6 consisting of 2 thru lanes traveling northbound and 1 thru, 1 thru/right-turn, and 1 left turn lane traveling southbound. There is curb and gutter along each side and approach of SR 5 with 5-ft sidewalks along the right side of the northern portion of the roadway.

Other projects in the area:

- PI No. 0012621, Safety and traffic flow improvements
- PI No. 0010821, Truck friendly lanes, SR 6 from I-20 WB to SR 6 Spur

MPO: Atlanta TMA	TIP	#: N/A			
Congressional Distric	ct(s): 13				
Federal Oversight:	□ PoDI	□ Exempt	\boxtimes	State Funded	□ Other
Projected Traffic (SR	6): 24 HF	R T: <u>18.0</u> %		Current Year (20)18): <u>39,400</u>
O	pen Year ((2028): <u>43,575</u>	5	Design Year (20	48): <u>53,175</u>
Projected Traffic (SR	5): 24 HF	R T: <u>11.0</u> %		Current Year (20)18): <u>18,900</u>
O	pen Year ((2028) 20 725	5	Design Year (20	48) 25 275

Traffic Projections Performed by: GDOT Office of Planning Date approved by the GDOT Office of Planning: 8/6/2018

AASHTO Functional Classification (Mainline): Principal Arterial AASHTO Context Classification (Mainline): Urban

AASHTO Project Type (Mainline/Quadrant): New Construction
AASHTO Project Type (SR 5/SR 6): Construction on existing roads
Is the project located on a NHS roadway?

□ No ☑ Yes

Complete Streets - Bicycle, Pedestrian, and/or Transit Standard Warrants:

Warrants met:	J None	⊠ Bicycle	□ Pedestrian	\boxtimes	Transit
---------------	--------	-----------	--------------	-------------	---------

- -Pedestrian Warrant #1: Pedestrian travel generators including commercial areas located along the intersection of SR 5 and SR 6. The intersection is less than 0.5 miles to Woodrow Wilson Park, 3.0 miles to Sweetwater Creek State Park and less than 1 mile from Elementary School.
- -Transit Warrant #1: Corridor served by fixed-route transit GRTA Express Thorton Road and Bankhead Highway Stop

Project Concept Report – Page 6	P.I. Number:
County: Douglas	

-Bicycle Warrant #3: Along project alignments with bicycle travel generators and destinations: The intersection is less than 0.5 miles to Woodrow Wilson Park, 3.0 miles to Sweetwater Creek State Park and less than 1 mile from Elementary School.

0013733

,	∐ Yes	
P □ No	⊠ Yes	
	⋈ HMA & PCC	
□ No □	⊠ Yes <i>Network</i>	
and ARC Regiona	al Thoroughfare Networ	k
□ No □	⊠ Yes	
? ⊠ No	☐ Yes	
	☐ PCC ☐ No ☐ Pand ARC Regiona	P ☐ No ☐ Yes ☐ PCC ☐ HMA & PCC ☐ No ☐ Yes <i>Network</i> and ARC Regional Thoroughfare Networ ☐ No ☐ Yes ☐ No ☐ Yes

DESIGN AND STRUCTURAL

Description of the proposed project:

This project is located in Douglas County at the intersection of SR 5/US 78 and SR 6/US 278, approximately 1.2 miles southwest of Austell and 1 mile east of Lithia Springs. This project consists of a newly constructed Quadrant Roadway throughout the Northwest area of the intersection connecting SR 5 and SR 6 SR 6/US 278 in order to improve current and future traffic mobility needs, reduce congestion, reduce the frequency of crashes and improve operations for trucks and passenger vehicle. The project is approximately 0.75 miles in length. Minor widening will occur along SR 5 and SR 6 in order to accommodate extra capacity. This includes a right turn lane along the northern leg of SR 6 turning onto the Quadrant Roadway, widening the southern leg of SR 6 before the intersection in order to accommodate 3 thru lanes and 1 right turn lane as well as widening the eastern leg of SR 5 in order to accommodate a free flow right turn movement for traffic traveling southbound from the Quadrant Roadway. A raised median varying from 7-14-ft as well as a 14-ft flushed median will be added along SR 5. A 16-ft raised median will be added along SR 6. A 10-ft multi-use path will be added along the right hand side of the quadrant, the left hand side of the northern and southern legs of SR 5, the right hand side of the western leg of SR 6 and a portion of the left hand side of the western leg of SR 6.

Major Structures:

Structure	Existing	Proposed
Structure ID 097-0006-0	SR 6 consists of Structure ID 097-0006-0 which is a bridge that crosses over Sweetwater Creek. The bridge consists of 7 12-ft lanes with 3 spans of steel beams on concrete caps and concrete columns. The bridge deck width is 115-ft 2.5-in and the bridge roadway width is 111-ft 11-in. There is a 4-ft raised concrete median along the middle of the bridge, a 12-ft outside shoulder in the NB direction and 10-ft outside shoulder in the SB direction.	No impacts anticipated (Quadrant)
	The total length of the bridge is 250–ft. The sufficiency rating of the bridge is 63.5.	

Accelerated Bridge Construction (ABC) techniques anticipated: ⊠ No ☐ Yes

Mainline Design Features:

SR 6/US 278	Functional Classif	ication: Principal Arte	erial
Feature	Existing	*Policy	Proposed
Typical Section:		_	2
- Number of Lanes	4/6		5/6
- Lane Width(s) (-ft)	12-ft	12-ft	12-ft
- Median Width (-ft) & Type	4-ft Raised Median	20 or 24-ft Raised Median	16-ft Raised
- Border Area Width (-ft)	Unknown	10-ft	12-ft
- Cross Slope (%)	Unknown	2%	2%
- Outside Shoulder Slope (%)	Unknown	6%	6%
- Sidewalks (-ft)	5-ft Concrete	5-ft Concrete	5-ft Concrete & 10-ft Concrete MU Path
- Auxiliary Lanes (#lanes/-ft width)	2 12-ft		2 12-ft
- Bike Accommodations	None	4-ft Bike Lane	10-ft Multi-Use Path
Posted Speed (mph)	45 MPH		45 MPH
Design Speed (mph)	45 MPH	45 MPH	45 MPH
Minimum Horizontal Curve Radius (-ft)	Unknown	<u>></u> 711-ft	2738-ft
Maximum Superelevation Rate (%)	Unknown	4%	Unknown
Maximum Grade (%)	Unknown	7%	Unknown
Access Control	Permit	Permit	Permit
Design Vehicle	<u>></u> WB40		WB-67
Check Vehicle	N/A		N/A
Pavement Type	Asphalt/Concrete		Asphalt/Concrete

^{*}According to current GDOT Design Policy if applicable

SR 5/US 78	Functional Classif	ication: Minor Arteria	n/
Feature	Existing	*Policy	Proposed
Typical Section:			
- Number of Lanes	4		4
- Lane Width(s) (-ft)	12-ft	12-ft	12-ft
- Median Width (-ft) & Type	4-ft Raised Median	14-ft Flushed Median	Varies 7 – 12-f Raised, 14-ft Flushed
- Border Area Width (-ft)	Unknown	10-ft	12-ft
- Cross Slope (%)	2%	2%	2%
- Outside Shoulder Slope (%)	6%	6%	6%
- Sidewalks (-ft)	5-ft Concrete	5-ft Concrete	5-ft Concrete & 10-ft Concrete MU Path
- Auxiliary Lanes (#lanes/-ft width)	1 12-ft		None
- Bike Accommodations	None	4-ft Bike Lane	10-ft Multi-Use Path
Posted Speed (mph)	45 MPH		45 MPH
Design Speed (mph)	45 MPH	45 MPH	45 MPH
Minimum Horizontal Curve Radius (-ft)	1075-ft	<u>></u> 711-ft	1075-ft
Maximum Superelevation Rate (%)	4%	4%	4%
Maximum Grade (%)	7%	7%	7%
Access Control	Permit	Permit	Permit
Design Vehicle	<u>></u> WB40		WB-67
Check Vehicle	N/A		N/A
Pavement Type	Asphalt		Asphalt

Quadrant	Functional Classification: Minor Arterial					
Feature	Existing	*Policy	Proposed			
Typical Section:						
- Number of Lanes	N/A		4			
- Lane Width(s) (-ft)	N/A	12-ft	12-ft			
- Median Width (-ft) & Type	N/A	20 or 24-ft Raised Median	20-ft Raised			
- Border Area Width (-ft)	N/A	10-ft	12-ft			
- Cross Slope (%)	N/A	2%	2%			
- Outside Shoulder Slope (%)	N/A	6%	6%			
- Sidewalks (-ft)	N/A	5-ft Concrete	5-ft Concrete & 10-ft Concrete MU Path			
- Auxiliary Lanes (#lanes/-ft width)	N/A		None			
- Bike Accommodations	N/A	4-ft Bike Lane	10-ft Multi-Use Path			
Posted Speed (mph)	N/A		35 MPH			
Design Speed (mph)	N/A	35 MPH	35 MPH			
Minimum Horizontal Curve Radius (-ft)	N/A	≥371-ft	666-ft			
Maximum Superelevation Rate (%)	N/A	4%	4%			
Maximum Grade (%)	N/A	7%	7%			
Access Control	N/A	Permit	Permit			
Design Vehicle	N/A		WB-67			
Check Vehicle	N/A		N/A			
Pavement Type	N/A		Asphalt			

^{*}According to current GDOT Design Policy if applicable

Design Exceptions/Design Variances to FHWA or GDOT Controlling Criteria anticipated:

	ı				
FHWA or GDOT Controlling Criteria	No	Undetermined	Yes	DE or DV	Approval Date (if applicable)
1. Design Speed	\boxtimes				
Design Loading Structural Capacity	\boxtimes				
Stopping Sight Distance	\boxtimes				
4. Horizontal Curve Radius	\boxtimes				
5. Maximum Grade	\boxtimes				
6. Vertical Clearance	\boxtimes				
7. Superelevation Rate	\boxtimes				
8. Lane Width	\boxtimes				
9. Cross Slope	\boxtimes				
10. Shoulder Width	\boxtimes				

Project Concept Report – Page 10 County: Douglas

Design Variances to GDOT Standard Criteria anticinated:

Design Variances to GDOT Standard Criteria antic	Design Variances to GDOT Standard Criteria anticipated:						
GDOT Standard Criteria	No	Undetermined	I Yes	Approval Date (if applicable)			
1. Access Control	\boxtimes						
2. Shoulder Width	\boxtimes						
3. Intersection Sight Distance	\boxtimes						
4. Intersection Skew Angle	\boxtimes						
5. Tangent Lengths on Reverse Curves	\boxtimes						
6. Lateral Offset to Obstruction	\boxtimes						
7. Rumble Strips	\boxtimes						
8. Safety Edge	\boxtimes						
9. Median Usage			\boxtimes				
10. Roundabout Illumination Levels	\boxtimes						
11. Complete Streets Warrants	\boxtimes						
12. ADA Requirements in PROWAG	\boxtimes						
13. GDOT Construction Standards	\boxtimes						
14. GDOT Drainage Manual	\boxtimes						
VE Study anticipated: ⊠ No ☐ Yes ☐ Co	omplete	d: <i>N/A</i>					
Off-site Detours Anticipated: ⊠ No ☐ Unde	etermine	ed 🗆 Yes					
•	al Road		e				
_	al Road						
District Concurrence w/Detour Route: No/							
District Concurrence w/Detour Route. No/	rendin	g □ Neceived	Dale				
Transportation Management Plan [TMP] Required: If Yes: Project classified as: TMP Components Anticipated:		lon-Significant	☑ Yes☑ Significat☑ TO	nt ⊠ PI			
INTERCHANGES AND INTERSECTIONS Interchanges/Major Intersections: SR 5/US 78 at SR 6/US 278							
Intersection Control Evaluation (ICE) Required:	□ N	lo ⊠ Yes					
_	_						

Roundabout Concept Validation Required: oximes No oximes Yes oximes Completed $\emph{N/A}$

P.I. Number: 0013733

Project Concept Report – Page 11

County: Douglas

P.I. Number: 0013733

UTILITY AND PROPERTY

Railroad Involvement: None

Utility Involvements:

- -Overhead Electric, Cable and Phone distribution lines running primarily along the east shoulder of SR 5 within ¼ mile if the intersection and running along the south shoulder of SR 6 throughout the project footprint.
- -Underground gas line running along the north shoulder of SR 6 and attached to the bottom of the bridge superstructure.
- -Water lines running along west shoulder of SR 5 approximately 30-ft from the edge of pavement. No evident sanitary sewer facilities along SR 5 or SR 6.
- -Pumping Station located just SW of existing bridge.

Utility Owners:

- Austell Gas Company
- ATT Telecom
- Comcast Telecom
- Cobb County Sewer
- Douglas County Water & Sewer Authority Water
- Douglas County Water & Sewer Authority Sewer
- GA 811
- Georgia Power
- Greystone Power Corporation Electric
- Sync Global Telecom
- Zayo Fiber Solutions Telecom

SUE Required:	□ No	⊠ Yes	☐ Undeter	mined				
Public Interest Right-of-Way (I		-	Procedure re Varies 109-1			⊠ No osed width	☐ Yes : <u>Varies 12</u>	<u>0-180</u> ft.
Required Right-	Required Right-of-Way anticipated: ☐ None ☐ Yes ☐ Undetermined							
Easements antic	cipated:	☐ Noi * Perm	ne ⊠ Temp anent easeme	,			☐ Utility ce utilities.	☐ Other
	Antic	pated total	number of im	pacted pa	arcels:	17		
				Busine	esses:	1	D. Pass	
	Dis	placements	anticipated:	Reside	ences:	0	10/6/20	
				(Other:	0		
			Total I	Displacen	nents:	1		
Location and D	esign approval		Required	⊠ Requ	uired] Undeteri	minad	

Project Concept Report – Page 12

County: Douglas

ENVIRONMENTAL & PERMITS

Anticipated Environmental Document: Document Type **NONE**

Level of Environmental Analysis:					
☐ The environmental considerations noted below	are base	d on preli	minary <u>d</u>	esktop or sc	creening level
environmental analysis and are subject to revision and agency concurrence.	after the c	ompletion o	of resourc	e identification	n, delineation,
☐ The environmental considerations noted below delineation, and agency concurrence.	are based	on the co	ompletion	of resource	identification,
GDOT MS4 Permit Compliance – Is the project loca	ted in a GI	OOT MS4 a	rea?	□ No	⊠ Yes
If yes, is the GDOT MS4 Permit anticipated to apply	to all or p	art of this	project?	\square No	
Is Non-MS4 water quality mitigation anticipated?	⊠ No		Yes		
Environmental Permits/Variances/Commitments/Co	ordination	ո anticipate	∍d:		
Permit/Variance/Commitment/					
Coordination Anticipated	No	Yes	i	Remarks	i
1 U.S. Coast Guard Permit	\square				

P.I. Number: 0013733

Permit/Variance/Commitment/			
Coordination Anticipated	No	Yes	Remarks
1. U.S. Coast Guard Permit	\boxtimes		
2. Forest Service/NPS	\boxtimes		
3. CWA Section 404 Permit		\boxtimes	
4. Tennessee Valley Authority Permit	\boxtimes		
5. USACE Real Estate Outgrant	\boxtimes		
6. Buffer Variance		\boxtimes	
7. Coastal Zone Management Coordination	\boxtimes		
8. NPDES		\boxtimes	
9. FEMA		\boxtimes	
10. Cemetery Permit	\boxtimes		
11. Other Permits	\boxtimes		
12. Other Commitments	\boxtimes		
13. Other Coordination	\boxtimes		

Is a PAR required?	oxtimes No	☐ Yes		Completed	Date
--------------------	------------	-------	--	-----------	------

Environmental Comments and Information:

NEPA/GEPA:

- Anticipated Document: State-funded; No previously approved environmental documents.
- Section 6(f): Not anticipated based on early coordination with DNR.

Ecology:

- Informal Section 7 consultation anticipated from federally protected bat (northern long-eared) due to potential for tree-clearing. Habitat to be assessed for federally protected dwarf sumac, white fringeless orchid, little amphianthus, and state-protected pink ladyslipper within forested areas.
- Occurrences of pink ladyslipper and bald eagle near the APE; Historic occurrences of state-protected highscale shiner and Chattahoochee crayfish near the APE; bridge/culvert surveys needed for roosting birds or bats.
- One stream (Sweetwater Creek), one wetland system and one open water identified during desktop survey.

Project Concept Report – Page 13

County: Douglas

History:

 15 parcels (based on 1968) were identified within the project footprint and viewshed of the 400-ft buffer of the project corridor.

P.I. Number: 0013733

- Bridge No. 097-0006-0 is not eligible for the NRHP
- High number of historic resources within project area results in high probability of eligible resources.
 Distance from existing edge of pavement to resources indicated that physical impacts would be limited and displacements are not anticipated.

Archeology:

- Georgia Archaeological Site Files were not reviewed so resource-specific risks for archaeology were not assessed.
- No APRA of GADNR permit anticipated.
- Frog Rock Property owned by City of Austell located north of the project limits. Property may be part of Louise Suggs Memorial Park. No physical impacts to the park or site anticipated.

Air	Qual	lity:
-----	------	-------

Is the project located in an Ozone Non-attainment area?	□ No	⊠ Yes
Is a Carbon Monoxide hotspot analysis required?	□ No	⊠ Yes

Noise Effects: Low concern as the project is proposed as state funded. The lane configuration would not increase capacity and existing non-residential development along the corridor. A noise study will not be required unless there are adverse impacts to NRHP-eligible resources.

Public Involvement:

- Community Resources: 2 churches, one GA Xpress commuter bus stop identified.
- Businesses: Approximately 20 businesses were identified immediately along the corridor, 6 of which are auto dealerships or provide auto services which may handle hazardour material. Norfolk Southern has also been identified as a stakeholder as a high percentage of truck traffic is generated from Whittaker Yard.
- Potential Controversy: Controversy anticipated from businesses, nearby residents and community resources if displacements occur or access points change. Could have a concern over GA Xpress access during and after construction.
- Stakeholder Risks: Potential concern for access to businesses within the footprint of the corridor; specifically at the NW (Acceptance Auto Sales) and SW (U.S. Auto Sales) corner.
- Public Involvement Risks: Outreach would be needed to educate the public about quadrant roadway.
- Type of Public Involvement anticipated: PIOH

Major stakeholders:

- City of Douglasville
- Douglas County
- Traveling Public
- Acceptance Auto Sales
- U.S. Auto Sales
- Arby's
- RideTime Inc.
- Food Depot

CONSTRUCTION

Issues potentially affecting constructability/construction schedule:

High traffic volumes may require construction time restrictions

Early Completion Incentives recommended for consideration:

Project Concept Report – Page 14 County: Douglas

COORDINATION, ACTIVITIES, RESPONSIBILITIES, AND COSTS

Initial Concept Team Meeting: The Initial Concept Meeting was held on August 30, 2019 at One Georgia Center.

P.I. Number: 0013733

Concept Team Meeting: The Concept Team Meeting was held on May 22, 2020 via a virtual meeting. Minutes can be found in Attachment 12.

Project Activity	Party Responsible for Performing Task(s)
Concept Development	GDOT – Office of Roadway Design
Design	GDOT – Office of Roadway Design
Right-of-Way Acquisition	GDOT – Office of Right of Way
Utility Coordination (Preconstruction)	GDOT – Office of Utilities
Utility Relocation (Construction)	Utility Owners
Letting to Contract	GDOT – Office of Construction Bidding Administration
Construction Supervision	GDOT – District 7 Construction
Providing Material Pits	Contractor
Providing Detours	Contractor
Environmental Studies, Documents, & Permits	GDOT – Environmental Services
Environmental Mitigation	GDOT – Environmental Services
Construction Inspection & Materials Testing	GDOT – Materials & Research Office

Project Cost Estimate Summary and Funding Responsibilities:						
	PE Act	ivities				
	PE Funding	Section 404 Mitigation	ROW	Reimbursable Utilities	CST*	Total Cost
Date of Estimate:	1/16/2018	5/6/2020	9/10/2020	6/1/2020	9/30/2020	
Funded By:	GDOT	GDOT	GDOT	N/A	GDOT	
Programmed Cost:	\$1,000,000.00		\$7,200,000.00	\$0.00	\$9,000,000.00	\$17,200,000.00
Estimated Cost:	\$1,000,000.00	\$70,000.00	\$2,945,000.00	\$975,000.00	\$10,627,292.15	\$15,617,292.15
Total Cost Difference:						\$1,582,707.85

^{*}CST Cost includes: Construction, Engineering and Inspection, Contingencies and Liquid AC Cost Adjustment.

Project Concept Report – Page 15

County: Douglas

P.I. Number: 0013733

ALTERNATIVES DISCUSSION

Alternative selection:

Preferred Alternative: The preferred alternative will add a Quadrant Roadway to the NW quadrant of the intersection along with minimal widening along SR 5 and SR 6. The proposed typical section of the Quadrant consists of 4 12-ft travel lanes (two in each direction), a 20-ft wide raised median, and a 12-ft overall shoulder containing curb and gutter and 5-ft sidewalks. In addition, SR 5 and SR 6 will require widening in order to achieve adequate capacity throughout the intersection.

Estimated Property Impacts:	17	Estimated Total Cost:	\$15,617,292.15
Estimated ROW Cost:	\$2.945.000.00	Estimated CST Time:	30 Months

Rationale: Based on the approved traffic study, the SR 5/SR 6 intersection will be operating at a LOS F by 2028 in the no-build alternative. This alternative would improve intersection capacity and is expected to operate at a LOS C (AM) and LOS C (PM) in the design year of 2048. The Quadrant alternative provides significant crash reduction. The Quadrant will have minimal Environmental impacts as it will not require widening of the bridge over Sweetwater Creek unlike the other alternatives. The design of the Quadrant lends itself to easier staging which will have less impact on the traveling public. This alternative has a lower construction cost than the other alternatives while providing similar capacity improvements.

Alternative 1: A 2-Leg Continuous Flow Intersection proposed along SR 6						
Estimated Property Impacts:	stimated Property Impacts: 17 Estimated Total Cost: \$16,002,556.60					
Estimated ROW Cost:						

Rationale: Based on the approved traffic study, the SR 5/SR 6 intersection will be operating at a LOS F by 2028 in the no-build alternative. This alternative would improve intersection capacity and is expected to operate at a LOS C in the design year of 2048. This alternative varies from the preferred in that the intersection would be fully reconstructed into a 2-leg Continuous Flow Intersection. While the CFI provides similar safety and capacity benefits as the preferred alternative, it will have significant Environmental impacts as it will require widening of the bridge over Sweetwater Creek as well as affect a potential eligible archaeological site east of the bridge over Sweetwater Creek. The staging of the CFI is similar in practice and ease to the preferred alternative. The construction cost for the CFI is more expensive than the preferred alternative while providing similar benefits. It is for these reasons this alternative is not recommended for implementation.

Alternative 2: Signalized Intersection with Widening						
Estimated Property Impacts:	17	Estimated Total Cost:	\$7,195,701.20			
Estimated ROW Cost:	\$698,000.00	Estimated CST Time:	24 Months			

Rationale: Based on the approved traffic study, the SR 5/SR 6 intersection will be operating at a LOS F by 2028 in the no-build alternative. This alternative would slightly improve intersection capacity but is expected to operate at a LOS F in the design year of 2048. This alternative varies from the preferred in that the intersection would be widened to accommodate dual lefts on SR 6. Though this alternative will add capacity to the left turning movements it will not provide adequate capacity improvements. This alternative will have significant Environmental impacts as it will require widening of the bridge over Sweetwater Creek as well as affect a potential eligible archaeological site. The staging of the widening will cause significant impacts on the travelling public. It is for these reasons this alternative is not recommended for implementation.

No-Build Alternative: No improvements made to the existing intersection					
Estimated Property Impacts: None Estimated Total Cost: \$0.00					
Estimated ROW Cost: \$0.00 Estimated CST Time: None					
Rationale: The traffic volume along SR 6 and SR 5 is expected to increase in the design year. The					
increased volume is expected to	create more congest	ion and worsen traffic condition:	3.		

Project Concept Report – Page 16 County: Douglas

LIST OF ATTACHMENTS/SUPPORTING DATA

- 1. Concept Layout
- 2. Typical sections
- 3. Detailed Cost Estimates:
 - a. Construction including Engineering and Inspection and Contingencies
 - b. Revisions to Programmed Costs forms, & Liquid AC Cost Adjustment forms

P.I. Number: 0013733

- c. Right-of-Way
- d. Environmental Mitigation
- e. Utilities
- 4. Concept Utility Report
- 5. Crash summaries and diagrams
- 6. Design Traffic diagrams
- 7. Capacity analysis summary
- 8. Summary of TE Study and/or Signal Warrant Analysis
- ICE Report
 - a. Stage 1 Screening Decision Record
 - b. Concurrence Memo
 - c. Stage 2 Alternative Selection Decision Record
- 10. SI&A Report(s)
- 11. MS4 Concept Report Summary:
 - a. MS4 Concept Report Summary
 - b. MS4 Drainage Area Layout
- 12. Pavement Studies
- 13. Minutes of Concept Meetings

APPROVALS

Concur:	High Rettl	10/13/2020
	Director of Engineering	Date
Approve:		10-23-2020
	Chief Engineer	Date

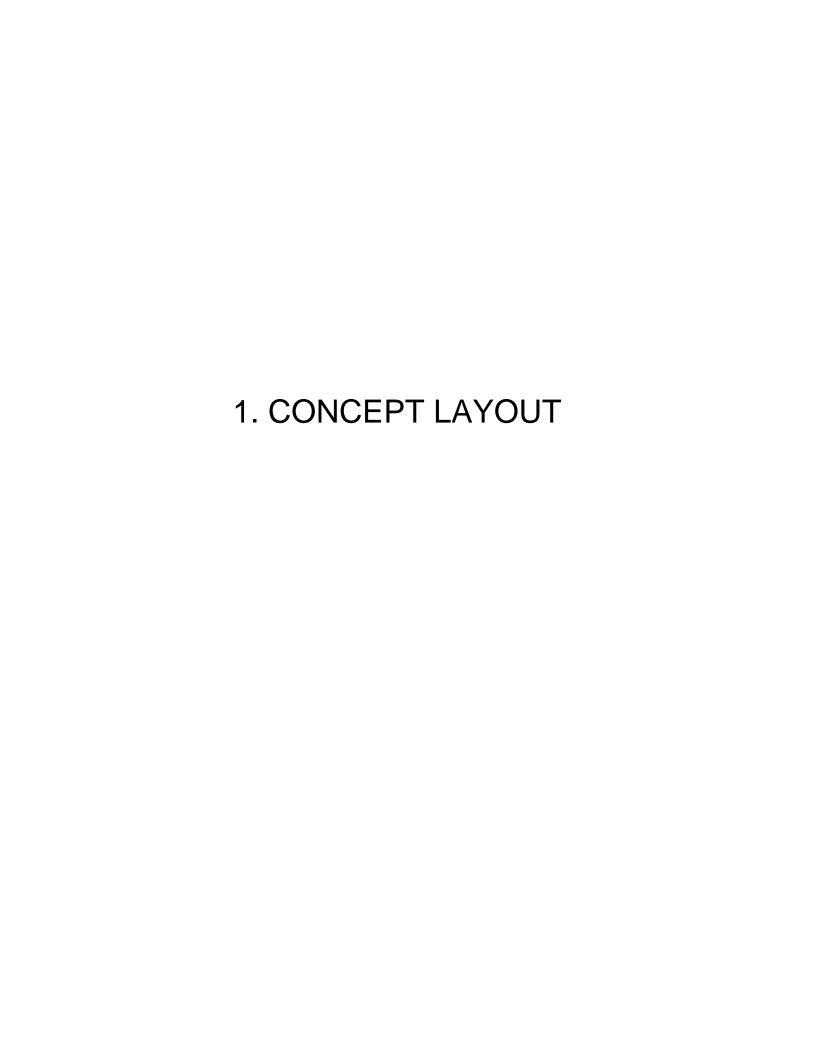
Project Concept Report – Page 17 County: Douglas P.I. Number: 0013733

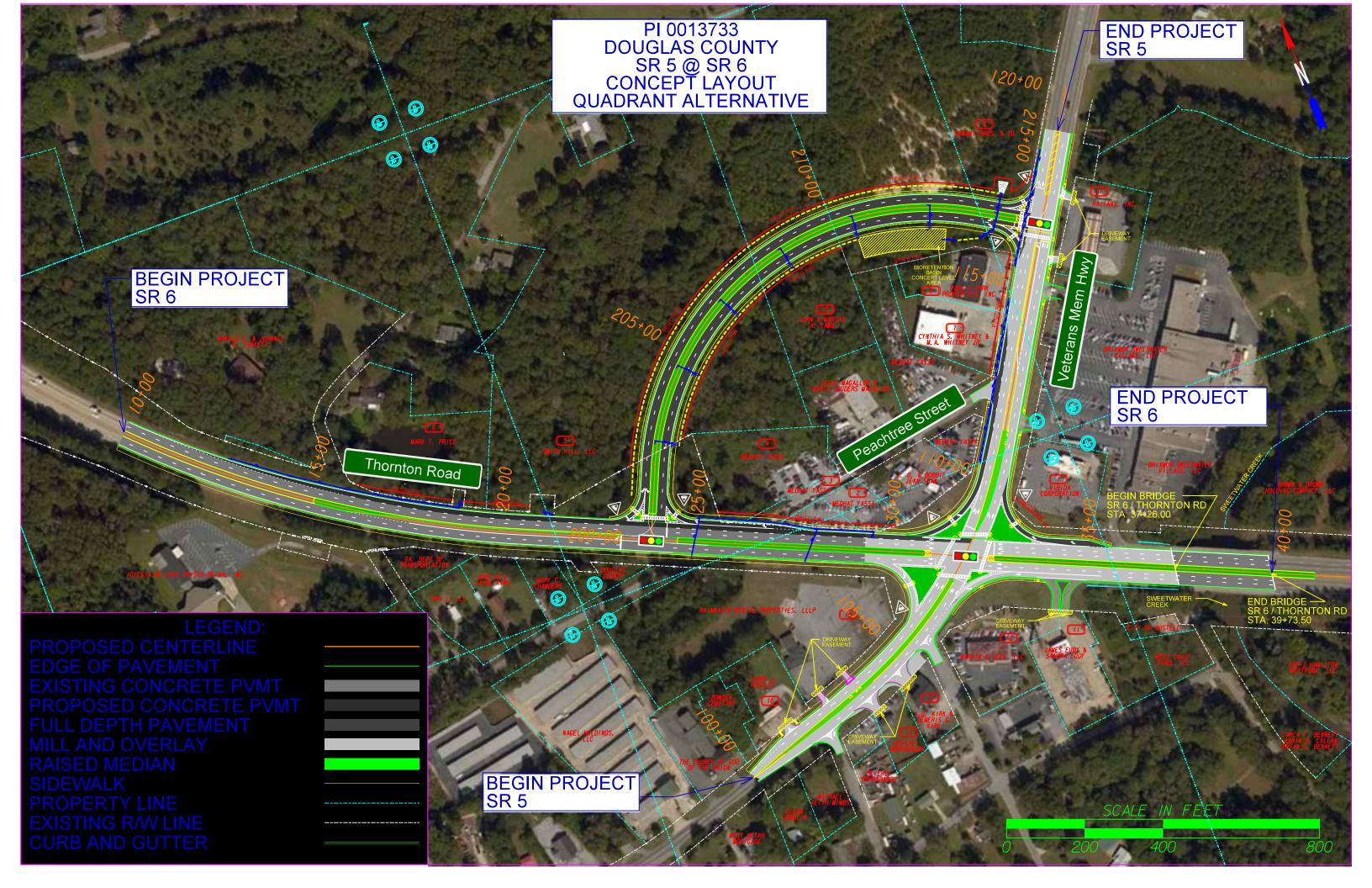
ALTERNATIVES ANALYSIS & SELECTION

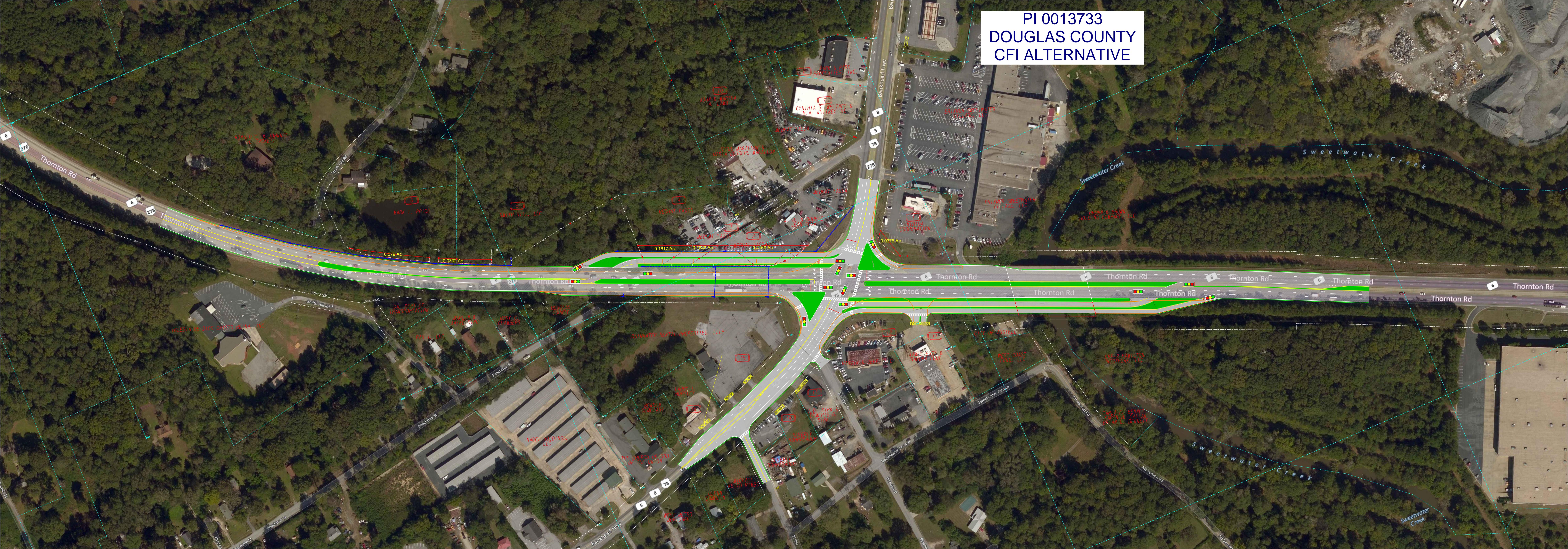
	Preferred Alternative	Alternative 1	Alternative 2
	Quadrant Intersection	Continuous Flow Intersection	Intersection Widening
CST Cost:	\$10,627,292.15	\$13,229,556.60	\$4,422,701.20
CST Duration:	30	30	24
ROW Cost:	\$2,945,000.00	\$698,000.00	\$698,000.00
Impacted Parcels:	17	17	17
Residential Displacements:	0	0	0
Commercial Displacements:	1	0	0
Capacity & Operations	2048 AM Build:	2048 AM Build:	2048 AM Build:
Considerations:	LOS C (29.4 s Delay)	LOS C (28.8 s Delay)	LOS F (161.2 s Delay)
	2048 PM Build:	2048 PM Build: LOS C	2048 PM Build:
	LOS C (23.7 s Delay)	(32.8 s Delay)	LOS F (420.9 s Delay)
Environmental Impacts:	Low – No impact to Sweetwater Creek. Quadrant may require a cross drain for a creek.	High -Significant impact to Sweetwater Creek as bridge will require widening, Potential Archaeological site E of bridge	High -Significant impact to Sweetwater Creek as bridge will require widening, Potential Archaeological site E of bridge
Mitigation Cost:	\$70,000.00	\$100,000.00	Not Estimated
Utility Cost/Impacts:	\$975,000.00	Not Estimated	Not Estimated
Off-site Detour Length/Duration:	None	None	None
Access:	Permitted Access – Quadrant Permitted Access – SR 5 Limited Access – SR 6 Northern Leg	Permitted Access – SR 5 Limited Access – SR 6 Northern Leg Permitted Access – SR 6 Southern Leg	Permitted Access – SR 5 Limited Access – SR 6 Northern Leg Permitted Access – SR 6 Southern Leg
	Permitted Access – SR 6 Southern Leg		

Project Concept Report – Page 18 County: Douglas P.I. Number: 0013733

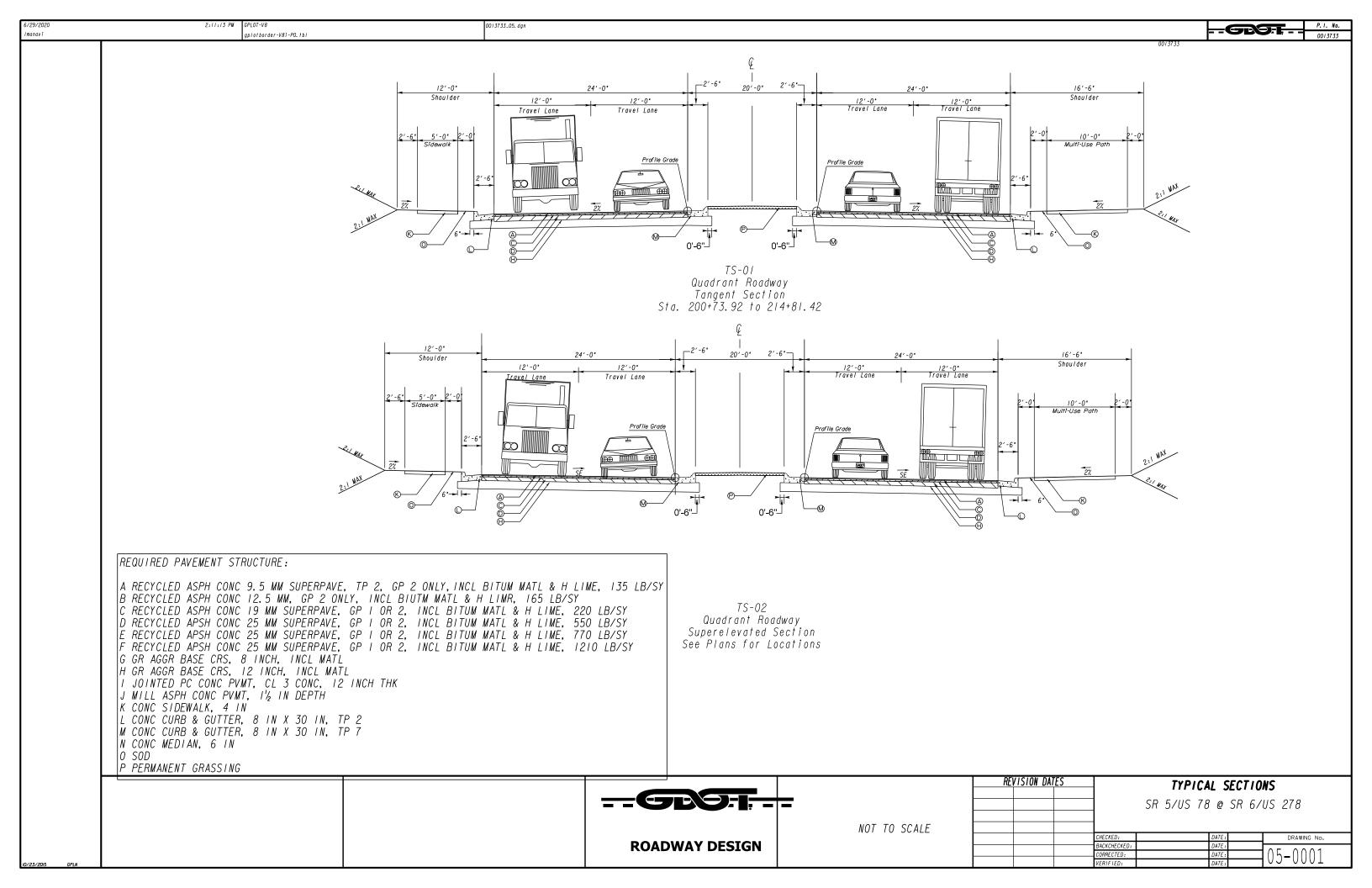
Critical Constraints: Preferred to tie in before bridge over Sweetwater Creek, Northern leg of quadrant must tie in after commercial businesses	Pumping station on east leg of SR 6	Pumping station on east leg of SR 6
--	--	--

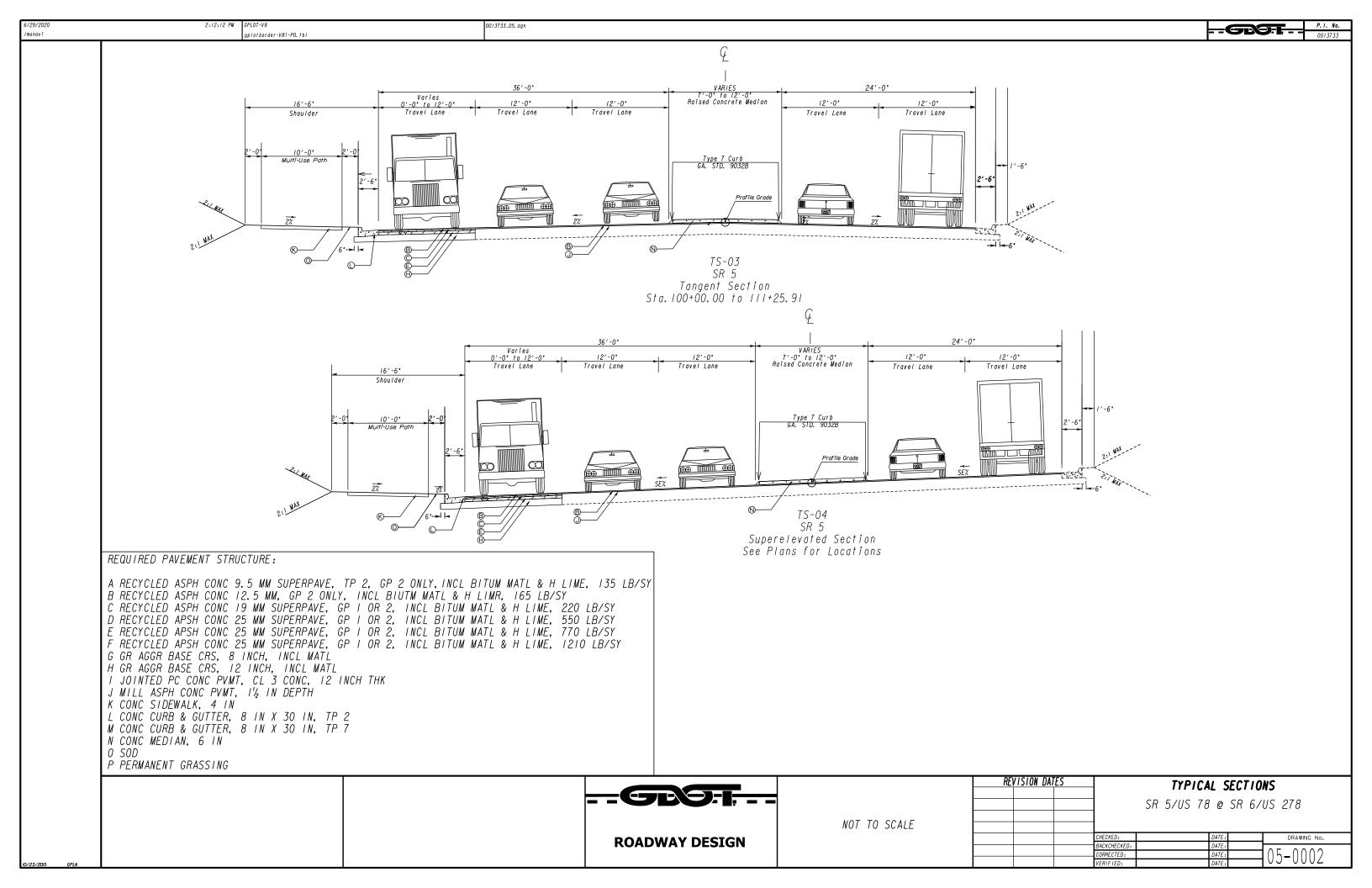


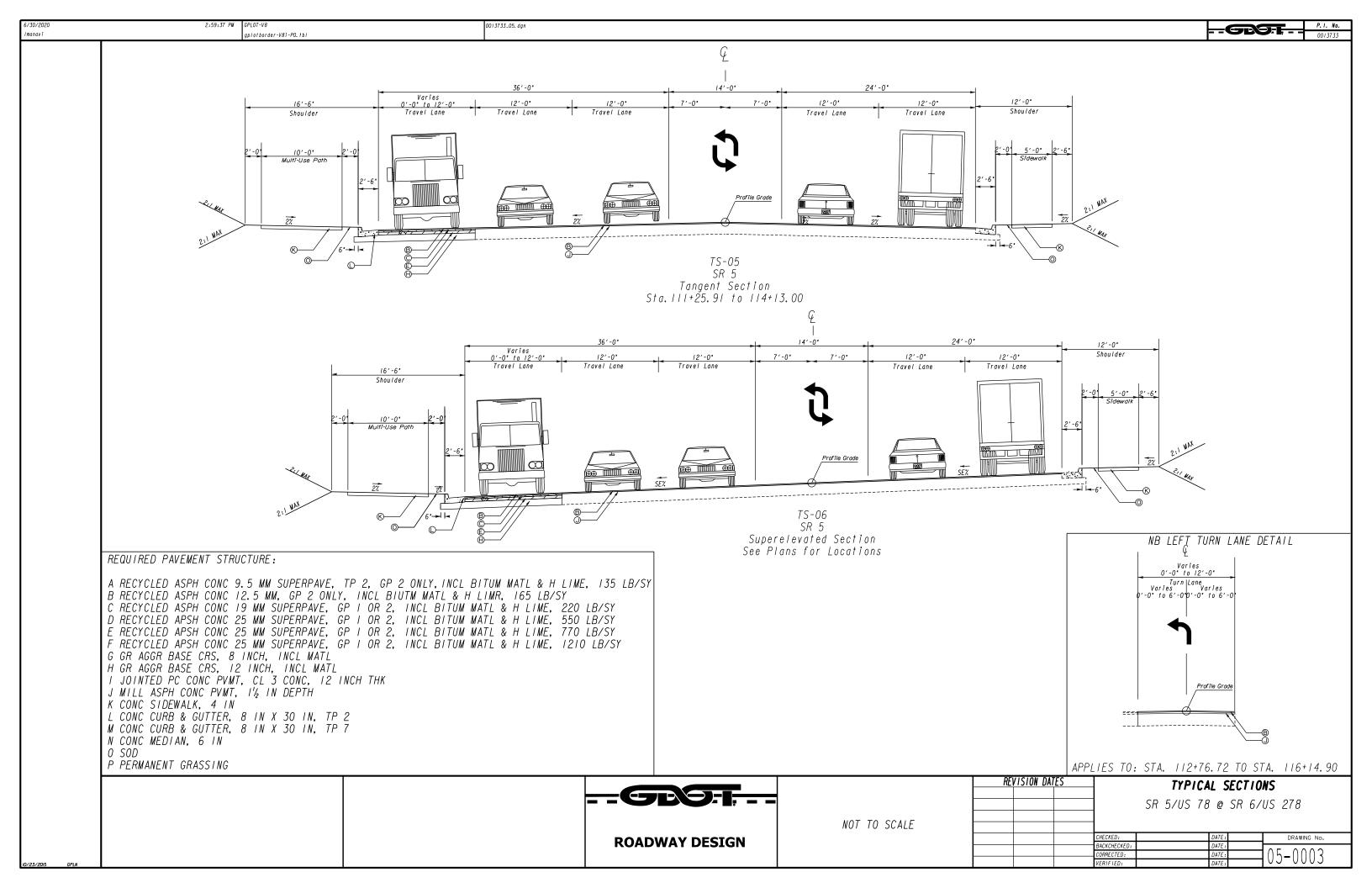


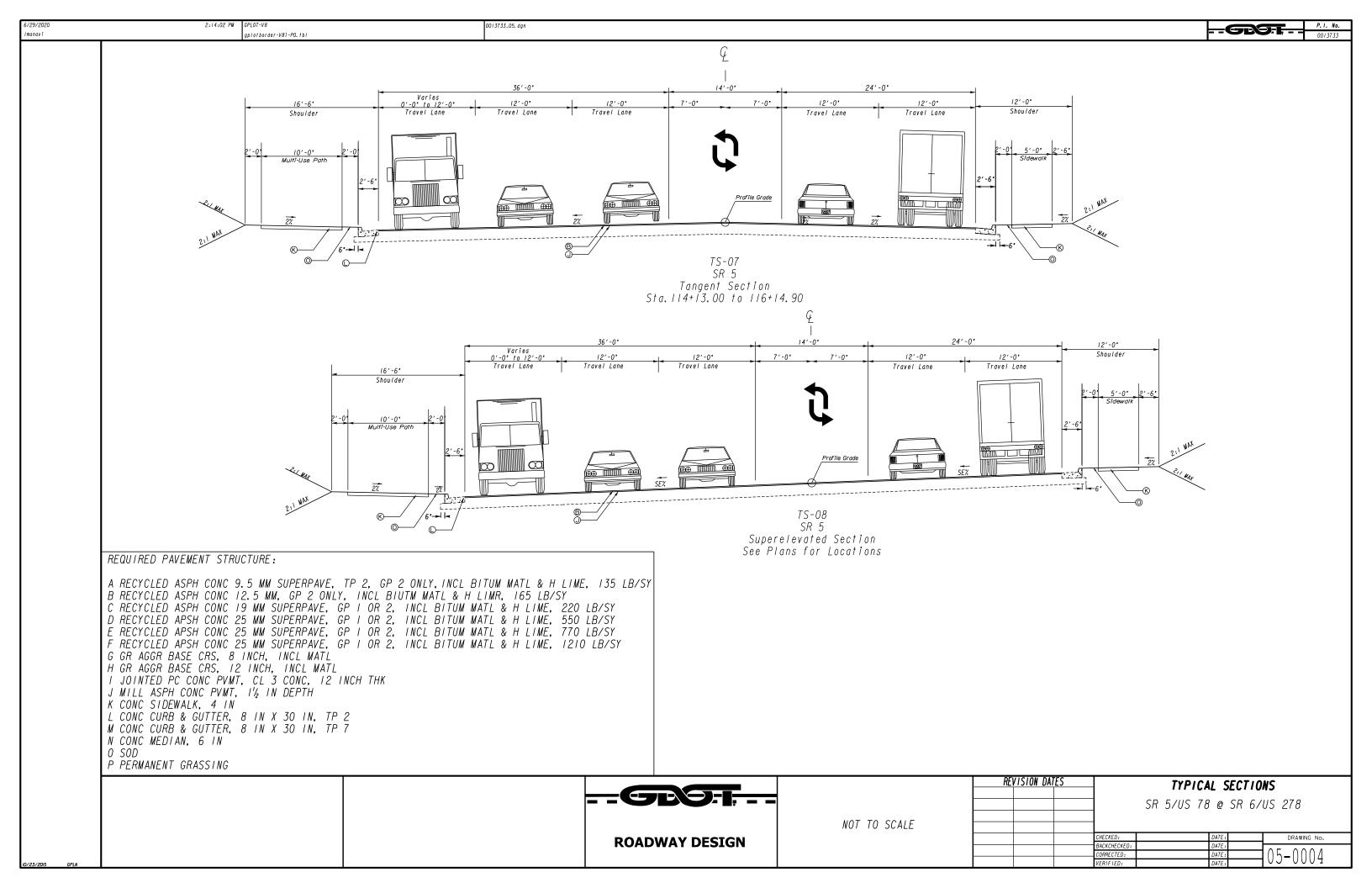


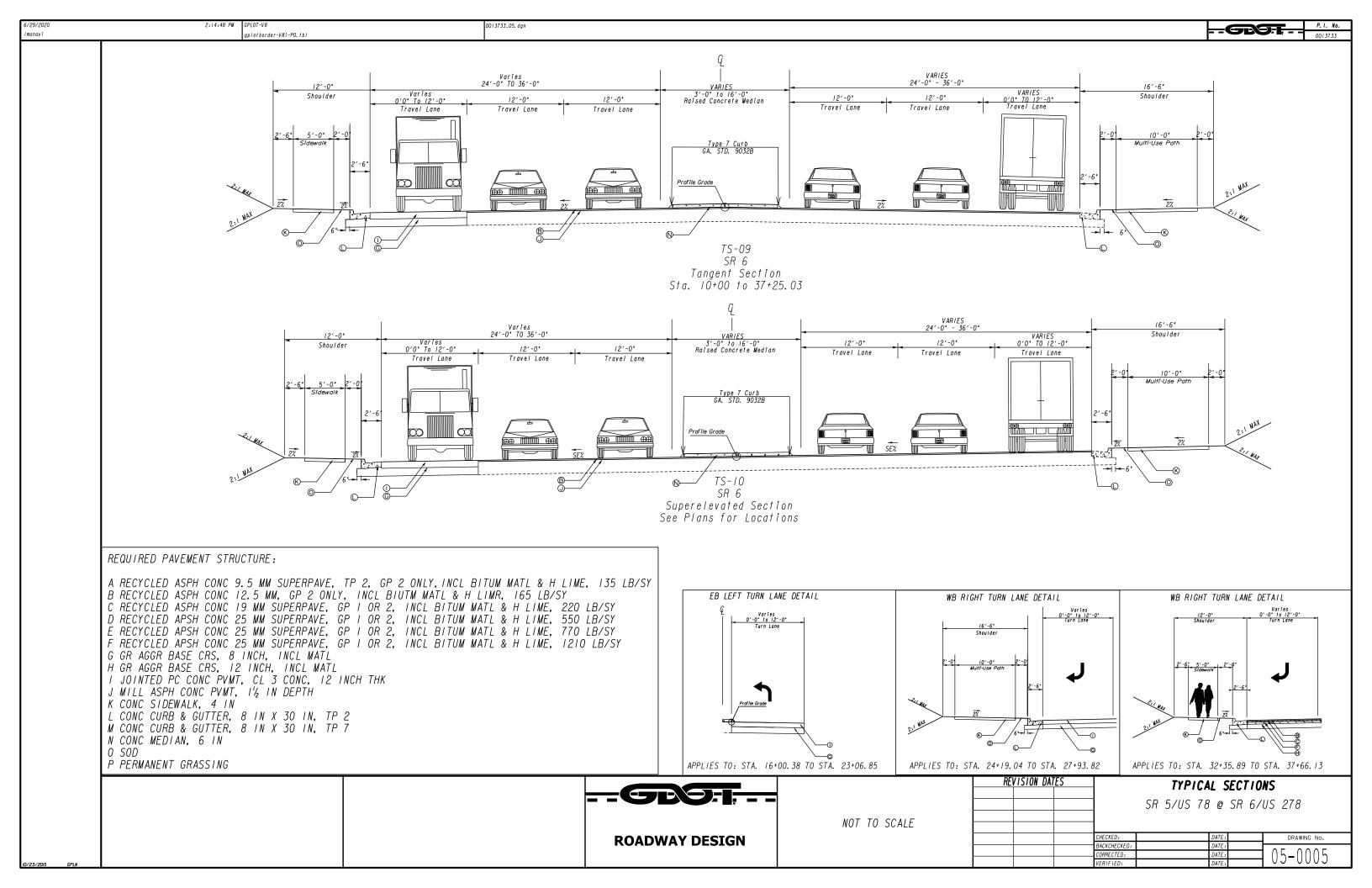
2. TYPICAL SECTIONS	











3. DETAILED COST ESTIMATES



Interoffice Memo

FILE							
PI NUMBER	NUMBER 0013733				PROJECT	SR 5/US 78 @ SR 6/US 278	s - QUADRANT
OFFICE	DFFICE Program Delivery				DESCRIPTION		
DATE Wednesday, September 30, 2020							
From:	Kim Nesbitt, Sta	ate Program Del	ivery Administrato	or]		
То:			Review Engineer	ot.ga.gov			
Subject:	REVISIONS TO	PROGRAMME	D COSTS				
Project Manag	ger:		Obi Ezenekwe				
Management	Let Date:		4/15/2023				
Management	Right of Way Da	te:	1/15/2022				
Cost Estimate	Review Iteration	<u>n</u>					
Date of Submit	tal #1	09/3	0/2020				
Date of Submit							
Date of Submit	tal #3						
Summary of P	rogrammed Cos	ts and Propose	ed Revised Cost	<u>s:</u>			
				Cost Estim	ate Amounts		
		te Type		(T-Pro Without Inflation)		Last Estimate Date	Revised Cost Estimate
CONSTRUCTION				\$9,000,000.00		09/30/2020	\$10,627,292.15
RIGHT OF WAY	Y			\$7,200,000.00		09/10/2020	\$2,945,000.00
UTILITIES					\$0.00	06/01/2020	\$975,000.00
	or Cost Change a						
Roadway shou		red alternative	for this project.				ss it was found that a Quadrant ons of GDOT Policy 3A-9 for
Attachments:							



Interoffice Memo

Design Phase Leader Validation of Final QC/QA for Construction Cost Estimate Used In This Revision to Programmed Costs:

	I
Consultant Company or GDOT Design Office:	GDOT Office of Hoadway Design
	T
Printed Name:	Steven Boockholdt, P.E.
T-11	
Title:	Design Group Manager
T	
Signature:	
In .	
Date:	9/30/2020
	FOR PROJECTS WITH A LOCAL SPONSOR
If the project has a local sponsor, the project n the construction cost estimate and whether it i	nanager should ensure that the local authority completes the following validation indicating that it has reviewed s in concurrence with the construction costs presented.
Please select the appropriate validation below	
 I acknowledge that I have reviewed the pr 	roject construction cost estimate and concur with the costs presented.
 I acknowledge that I have reviewed the pr 	roject construction cost estimate but do not concur with the costs presented.
Please provide an explanation for non-	
concurrence.	
Local Authority Name and Title:	
Local Authority Name and Title.	
Local Authority Signature:	
Local Authority Signature.	
Date:	
Date:	
Date:	



Interoffice Memo

Cost Estimate Worksheet:

OUST ESTIN	iate worksnee	<u></u>										
CONSTRUC	TION COST EST	IMATE (Required	base estimate ente	red from CES	and should not in	nclude E&I). →				Α	\$	8,089,108.62
ENGINEERII	NG AND INSPEC	TION (The default	t E&I percentage is 8	5.0%, but may	be adjusted per	project scope.) -	→			D	\$	404,455.43
Construction Cost E&I Per		ercentage E&I		I Cost								
	В		С	D =	BxC							
\$	8,089,108.62		5%	\$	404,455.43					1	•	1 000 710 01
CONTINGEN	NCY (Refer to the	Risk and Conting	encies Table include	ed in GDOT Po	olicy 3A-9 Cost E	stimating Purpose	e) →				\$	1,698,712.81
Constr	ruction Cost	E&	I Cost		ction + E&I	Contingency	Percentage	Conting	ency Cost			
	E		F		E + F	Н			GxH			
\$	8,089,108.62		404,455.43		8,493,564.05	209	<u>%</u>	\$	1,698,712.81	Q	\$	435,015.29
	UEL PRICE ADJU		blank if not applical	ole) →								
Date Regular Unle	paded		2020 47/ GAL		Current Asph	alt Fuel Index Pric	es can be four	nd at the link belo	w:			
Diesel	,adou		71/ GAL	-	http://w	ww.dot.ga.gov/PS	S/Materials/Asr	nhaltFuelIndex				
Liquid AC			00/ TON		<u>nttp://w</u>	ww.dot.ga.gowi c	3/Watchals//tsp	SHARL GERNACK				
Liquid AC		Tons	Percentage of Asphaltic Concrete	Tons of Asphaltic Concrete	Total Monthly Tonnage of Asphalt Cement (TMT) M = Sum of	Monthly Asphalt Cement Price month project let (APL)	Мах. Сар	Monthly Asphalt Cement Price month placed (APM)	Price Adjustment (PA)			
	Description	J	К	L = J x K	Columns L, T & W	N	0	P = (N x O)+N	Q = [((P - N) / N)] x M x N			
	Leveling	0.00 TN	5.00%	0.00 TN	1705.94 TN	\$425.00/ TON	60%	\$ 680.00	\$ 435,015.29			
	Patching	0.00 TN	5.00%	0.00 TN								
	9.5 mm SP 12.5 OGFC	769.39 TN 0.00 TN	5.00% 5.00%	38.47 TN 0.00 TN	1							
	12.5 PEM	0.00 TN	5.00%	0.00 TN								
	12.5 mm SP	28142.00 TN	5.00%	1407.10 TN								
	19 mm SP	1377.00 TN	5.00%	68.85 TN								
Bituminous	25 mm SP	3723.00 TN Tack Coat	5.00% GL/TN	186.15 TN Tons								
Tack Coat	Description	R R	S	T = R/S								
	Tack Coat	1250.92 GL	232.8234 GL/TN	5.37 TN								
Bituminous Tack Coat		SY	GL/SY	TN W = (U x V) /								
(Surface	Description	U	V	(232.8234 GL/TN)								
Treatment)	Single Surface Treatment	0.00 SY	0.20 GI/SY	0.00 TN								
	Double Surface Treatment	0.00 SY	0.44 GI/SY	0.00 TN								
	Triple Surface Treatment	0.00 SY	0.71 GI/SY	0.00 TN								
CONSTRUC	TION TOTAL CO							1		X = A+D+I+Q	\$	10,627,292.15
RIGHT OF W	VAY COST →									Y	\$	2,945,000.00
UTILITIES C	OST (Provided by	/ Utility Office) →								Z = Sum of Reimbursable	\$	975,000.00
	Utility Owner		Reimbursab	le Cost		Utility Owner		Reimbur	sable Cost	Costs		
	er Company Distr		\$	225,000.00								
	ver Company Trans	smission	\$	500,000.00 150,000.00								
Greystone Po	ower mmunications/CA	TV	\$	150,000.00								
	Douglas County V		\$									
	y Water System		\$									
Austell Gas		\$ -										
Bellsouth		\$ 100,000.00										
AT&T Communications Sync Global		\$ - \$ -										
Zayo		\$ -										

Project Cost Estimate

Concept Name: 0013733 Cost Estimate Name: 0013733

Projects Cost Estimate

Processed on: Sep-30-2020 01:13 PM

CONCEPT NAME: 0013733 COST ESTIMATE NAME: 0013733

SPEC YEAR: 13

TITEM HISTORY: BHP-ALL - Statewide - 24 months
DESCRIPTION: SR 5/US 78 @ SR 6/US 278
ESTIMATE PHASE: 2-DE - Designers Estimate

ITEMS FOR CONCEPT NAME 0013733

Line Number	Item	Quantity	Units	Price	Description	Amount
5	150-1000	1.00	LS	\$250,000.00	TRAFFIC CONTROL - 0013733	\$250,000.00
10	153-1300	1.00	EA	\$86,258.21	FIELD ENGINEERS OFFICE TP 3	\$86,258.21
15	210-0100	1.00	LS	\$2,000,000.00	GRADING COMPLETE - 0013733	\$2,000,000.00
20	156-0100	1.00	LS	\$10,000.00	GPS DATA COLLECTION AND SUBMITTAL	\$10,000.00
25	641-5015	2.00	EA	\$2,966.40	GUARDRAIL TERMINAL, TP 12A, 31 IN, TANGENT, ENERGY-ABSORBING	\$5,932.80
30	641-1200	203.00	LF	\$23.24	GUARDRAIL, TP W	\$4,717.96
35	150-5010	2.00	EA	\$7,939.03	TRAFFIC CONTROL, PORTABLE IMPACT ATTENUATOR	\$15,878.05
40	310-1101	9094.00	TN	\$39.34	GR AGGR BASE CRS, INCL MATL	\$357,783.97
45	402-3103	769.39	TN	\$106.29	RECYCLED ASPH CONC 9.5 MM SUPERPAVE, TYPE II, GP 2 ONLY, INCL BITUM MATL & H LIME	\$81,779.42
50	402-3130	28142.00	TN	\$79.74	RECYCLED ASPH CONC 12.5 MM SUPERPAVE, GP 2 ONLY, INCL BITUM MATL & H LIME	\$2,243,996.08
55	402-3121	3723.00	TN	\$112.38	RECYCLED ASPH CONC 25 MM SUPERPAVE, GP 1 OR 2, INCL BITUM MATL & H LIME	\$418,392.27
60	402-3190	1377.00	TN	\$137.06	RECYCLED ASPH CONC 19 MM SUPERPAVE, GP 1 OR 2,INCL BITUM MATL & H LIME	\$188,729.72
65	413-0750	1250.92	GL	\$3.76	TACK COAT	\$4,704.12
70	439-0026	2706.64	SY	\$95.00	PLAIN PC CONC PVMT, CL 3 CONC, 12 INCH THK	\$257,130.80
75	432-0206	19822.00	SY	\$5.45	MILL ASPH CONC PVMT, 1 1/2 IN DEPTH	\$108,029.70
80	446-1100	2015.00	LF	\$6.41	PVMT REINF FABRIC STRIPS, TP 2, 18 INCH WIDTH	\$12,921.65
85	318-3000	200.00	TN	\$19.51	AGGR SURF CRS	\$3,901.70
90	441-0104	6612.00	SY	\$28.17	CONC SIDEWALK, 4 IN	\$186,230.95
95	441-0108	20.00	SY	\$75.74	CONC SIDEWALK, 8 IN	\$1,514.85
100	441-0018	891.00	SY	\$66.47	DRIVEWAY CONCRETE, 8 IN TK	\$59,222.90
105	441-6740	2838.00	LF	\$17.16	CONC CURB & GUTTER, 8 IN X 30 IN, TP 7	\$48,699.14
110	441-4030	114.00	SY	\$66.85	CONC VALLEY GUTTER, 8 IN	\$7,620.36
115	441-0748	7640.00	SY	\$43.98	CONCRETE MEDIAN, 6 IN	\$335,975.72
120	441-6222	12229.00	LF	\$13.37	CONC CURB & GUTTER, 8 IN X 30 IN, TP 2	\$163,487.54
125	634-1200	27.00	EA	\$143.91	RIGHT OF WAY MARKERS	\$3,885.69
140	620-0100	2500.00	LF	\$43.99	TEMPORARY BARRIER, METHOD NO. 1	\$109,964.25
145	632-0003	2.00	EA	\$6,357.70	CHANGEABLE MESSAGE SIGN, PORTABLE, TYPE 3	\$12,715.40
ROADWAY To	tal					\$6,979,473.25

0200 - DRAINAGE

Line Number	Item	Quantity	Units	Price	Description	Amount
150	550-1240	292.00	LF	\$50.80	STORM DRAIN PIPE, 24 IN, H 1-10	\$14,834.36
155	550-1360	259.00	LF	\$90.48	STORM DRAIN PIPE, 36 IN, H 1-10	\$23,435.00
160	550-1180	1292.00	LF	\$76.31	STORM DRAIN PIPE, 18 IN, H 1-10	\$98,598.02
165	668-1100	19.00	EA	\$2,986.84	CATCH BASIN, GP 1	\$56,749.96
170	550-1300	10.00	LF	\$100.18	STORM DRAIN PIPE, 30 IN, H 1-10	\$1,001.82
175	550-1420	530.00	LF	\$107.02	STORM DRAIN PIPE, 42 IN, H 1-10	\$56,720.83
180	668-1105	7.00	EA	\$3,500.00	CATCH BASIN, GP 1, SPCL DES	\$24,500.00
185	668-1200	4.00	EA	\$3,997.41	CATCH BASIN, GP 2	\$15,989.65
190	550-4230	2.00	EA	\$1,285.40	FLARED END SECTION 30 IN, STORM DRAIN	\$2,570.79
195	550-4218	1.00	EA	\$1,005.22	FLARED END SECTION 18 IN, STORM DRAIN	\$1,005.22
200	550-4236	1.00	EA	\$1,529.37	FLARED END SECTION 36 IN, STORM DRAIN	\$1,529.37
205	668-2100	1.00	EA	\$3,587.37	DROP INLET, GP 1	\$3,587.37
210	615-1000	203.00	LF	\$321.02	JACK OR BORE PIPE - STEEL, 0.625-IN, 36-IN	\$65,166.59
DRAINAGE Total						\$365,688.98

0300 - TEMPORARY EROSION CONTROL

Line Number	Item	Quantity	Units	Price	Description	Amount
215	163-0232	3.00	AC	\$299.80	TEMPORARY GRASSING	\$899.39
220	163-0301	2.00	EA	\$1,889.31	CONSTRUCT AND REMOVE CONSTRUCTION EXITS	\$3,778.62
225	165-0101	2.00	EA	\$582.84	MAINTENANCE OF CONSTRUCTION EXIT	\$1,165.67
230	163-0550	22.00	EA	\$224.93	CONSTRUCT AND REMOVE INLET SEDIMENT TRAP	\$4,948.55
235	165-0030	4010.00	LF	\$0.54	MAINTENANCE OF TEMPORARY SILT FENCE, TP C	\$2,179.84
240	165-0105	22.00	EA	\$83.83	MAINTENANCE OF INLET SEDIMENT TRAP	\$1,844.17
245	167-1000	3.00	EA	\$317.58	WATER QUALITY MONITORING AND SAMPLING	\$952.73
250	167-1500	30.00	МО	\$721.13	WATER QUALITY INSPECTIONS	\$21,633.79
255	171-0030	8020.00	LF	\$4.16	TEMPORARY SILT FENCE, TYPE C	\$33,400.89
260	643-8200	500.00	LF	\$2.58	BARRIER FENCE (ORANGE), 4 FT	\$1,290.70
TEMPORARY EROSION CONTROL Total						\$72,094.35

0400 - PERMANENT EROSION CONTROL

Line Number	Item	Quantity	Units	Price	Description	Amount
265	163-0240	117.00	TN	\$186.02	MULCH	\$21,764.17
270	700-6910	6.00	AC	\$996.42	PERMANENT GRASSING	\$5,978.54
275	700-7000	12.00	TN	\$225.78	AGRICULTURAL LIME	\$2,709.31
280	700-8000	2.00	TN	\$560.44	FERTILIZER MIXED GRADE	\$1,120.89
285	700-8100	312.05	LB	\$6.07	FERTILIZER NITROGEN CONTENT	\$1,894.21
290	716-2000	3000.00	SY	\$1.80	EROSION CONTROL MATS, SLOPES	\$5,403.36
295	603-2181	20.00	SY	\$65.24	STN DUMPED RIP RAP, TP 3, 18 IN	\$1,304.83
300	700-9300	1166.00	SY	\$8.18	SOD	\$9,537.45
305	603-7000	20.00	SY	\$5.47	PLASTIC FILTER FABRIC	\$109.41
310	711-0100	1684.00	SY	\$4.04	TURF REINFORCING MATTING, TP 1	\$6,804.34
PERMANENT EROSION CONTROL Total						

<u>0500 - MS4</u>

Line Number	Item	Quantity	Units	Price	Description	Amount
130	169-0006	1.00	EA	\$10,000.00	BIORETENTION BASIN MAINTENANCE	\$10,000.00
135	169-0005	1.00	EA	\$50,000.00	BIORETENTION BASIN, NO BIORETENTION BASIN NO. 1	\$50,000.00
MS4 Total						\$60,000.00

<u>0600 - SIGNING</u>

Line Number	Item	Quantity	Units	Price	Description	Amount
415	636-1036	20.00	SF	\$23.39	HIGHWAY SIGNS, TP 1 MATL, REFL SHEETING, TP 11	\$467.79
425	636-2090	50.00	LF	\$9.50	GALV STEEL POSTS, TP 9	\$475.00
430	636-1033	100.00	SF	\$23.13	HIGHWAY SIGNS, TP 1 MATL, REFL SHEETING, TP 9	\$2,313.16
435	636-2070	50.00	LF	\$12.02	GALV STEEL POSTS, TP 7	\$600.98
SIGNING Total					\$3,856,93	

0610 - PAVEMENT MARKING

Line Number	Item	Quantity	Units	Price	Description	Amount
315	653-3502	354.00	GLF	\$1.21	THERMOPLASTIC SKIP TRAF STRIPE, 5 IN, YELLOW	\$429.52
320	653-4501	1.05	GLM	\$1,549.96	THERMOPLASTIC SKIP TRAF STRIPE, 5 IN, WHITE	\$1,627.45
325	653-2501	0.92	LM	\$3,107.34	THERMOPLASTIC SOLID TRAF STRIPE, 5 IN, WHITE	\$2,858.75
330	653-1804	1696.00	LF	\$2.53	THERMOPLASTIC SOLID TRAF STRIPE, 8 IN, WHITE	\$4,293.05
335	653-1704	169.00	LF	\$5.54	THERMOPLASTIC SOLID TRAF STRIPE, 24 IN, WHITE	\$935.69
340	653-6006	304.00	SY	\$5.53	THERMOPLASTIC TRAF STRIPING, YELLOW	\$1,681.71
345	653-6004	737.00	SY	\$5.35	THERMOPLASTIC TRAF STRIPING, WHITE	\$3,943.50
350	653-1502	4085.00	LF	\$0.49	THERMOPLASTIC SOLID TRAF STRIPE, 5 IN, YELLOW	\$2,021.75
355	654-1003	396.00	EA	\$5.67	RAISED PVMT MARKERS TP 3	\$2,245.33
360	653-0110	21.00	EA	\$95.92	THERMOPLASTIC PVMT MARKING, ARROW, TP 1	\$2,014.30
365	653-0120	7.00	EA	\$126.74	THERMOPLASTIC PVMT MARKING, ARROW, TP 2	\$887.15
370	653-0130	1.00	EA	\$210.64	THERMOPLASTIC PVMT MARKING, ARROW, TP 3	\$210.64
375	655-6000	1.00	EA	\$1,200.00	PREFORMED PLASTIC PVMT MKG ARROW, CONTRAST (BLACK-WHITE), TP 1	\$1,200.00
380	657-3054	9252.00	GLF	\$3.59	PREFORMED PLASTIC SKIP PVMT MKG, 5 IN, WHITE, TP PB	\$33,257.33
385	657-1085	73.92	LF	\$9.43	PREFORMED PLASTIC SOLID PVMT MKG, 8 IN, CONTRAST (BLACK-WHITE), TP PB	\$696.83
390	657-1244	108.00	LF	\$23.99	PREFORMED PLASTIC SOLID PVMT MKG, 24 IN, WHITE, TP PB	\$2,591.31
395	657-1054	8826.00	LF	\$6.30	PREFORMED PLASTIC SOLID PVMT MKG, 5 IN, WHITE, TP PB	\$55,600.80
400	657-7054	1.52	LM	\$23,267.00	PREFORMED PLASTIC SOLID PVMT MKG, 5 IN, YELLOW, TP PB	\$35,365.84
405	657-5001	268.00	SY	\$38.24	PREFORMED PLASTIC PAVEMENT MARKING, WHITE, TP PB	\$10,249.23
410	657-5002	41.00	SY	\$656.23	PREFORMED PLASTIC PAVEMENT MARKING, YELLOW, TP PB	\$26,905.57
440	654-1001	91.00	EA	\$5.50	RAISED PVMT MARKERS TP 1	\$500.08
PAVEMENT MARKING Total					\$189,515.83	

0700 - SIGNALS

Line Number	Item	Quantity	Units	Price	Description	Amount
420	639-3004	6.00	EA	\$12,808.79	STEEL STRAIN POLE, TP IV	\$76,852.77
445	647-1000	1.00	LS	\$85,000.00	TRAFFIC SIGNAL INSTALLATION NO - 1 (QUADRANT @ SR 6/US 278)	\$85,000.00
450	647-1000	1.00	LS	\$115,000.00	TRAFFIC SIGNAL INSTALLATION NO - 2 (SR 5/US 78 @ SR 6/US 278)	\$115,000.00
455	647-1000	1.00	LS	\$85,000.00	TRAFFIC SIGNAL INSTALLATION NO - 3 (QUADRANT @ SR 5/US 278)	\$85,000.00
SIGNALS Total						\$361,852.77

TOTALS FOR CONCEPT NAME 0013733

ITEMS COST:	\$8,089,108.62
TYPICAL SECTION:	\$0.00
ESTIMATED COST:	\$8,089,108.62
CONTINGENCY PERCENT:	
ENGINEERING AND INSPECTION:	
ESTIMATED COST WITH CONTINGENCY AND E&I:	

CONFIDENTIALITY NOTICE: This document may contain confidential and/or privileged information. Any unauthorized duplication, disclosure, distribution/retransmission of taking of any action in reliance upon the material in this document is strictly forbidden.

GEORGIA DEPARTMENT OF TRANSPORTATION PRELIMINARY ROW COST ESTIMATE SUMMARY

Date:	9/10/20	Project:	NA	
Revised:	ii ii	County:	DOUGLAS	
			0013733	
	SR 5 / US 78 @ SR6/US 2	78 - QUADRANT		
Project Termini:				
1= 0			Existing ROW: \	
Parcels:	17		Required ROW: \	/aries
	Land and Improvements		\$2,401,875.00	
	Proximity Damage	\$0.00		
	Consequential Damage	\$45,000.00		
	Cost to Cures	\$40,000.00		
	Trade Fixtures	\$20,000.00		
	Improvements	\$950,000.00		
	Valuation Services		\$131,875.00	
	Logal Carviage		\$122 975 00	
	Legal Services	·····	, \$123,373.00	
	Relocation		\$81,000.00	
	Demolition		\$44,000.00	
	Demondon		, 4 1 1,000.00	
	Administrative		\$161,500.00	
,	TOTAL ESTIMATED COSTS		\$2,944,225.00	
	TOTAL ESTIMATED COSTS		, \$2,541,225.00	
TOTAL ESTIMA	ATED COSTS (ROUNDED)		\$2,945,000.00	
Prepared By:	Cheryl Worthy Pickett	Chal	Thof-Pickett	9/10/20
an anno granden anno anno anno anno anno anno anno an	Print Name		Signature	Date
Cost Estimation Supervisor	Valencia Car	les Volo	und Post	9/20/2020
Cost Estillation Supervisor	Print Name	VI VIII	Signature	Date
NOTE: Superviser is only attes	sting that the estimate was o		ect information provided	for the the project.
The Supervisor is not attesting	to property values or the a	ccuracy of the market v	alue estimations provided	d in this report. No
Maybot Appropiation is include	d in this Droliminary Cost Es	timata		

Market Appreciation is included in this Preliminary Cost Estimate.

Comments: Parcel 8 is assumed to be a total take; which is a mulit-tenant (6) commercial structure.

Hardman, Lilian

From: Westberry, Lisa

Sent: Wednesday, May 6, 2020 1:21 PM

To: White, Davida; Boockholdt, Steven C; Hardman, Lilian

Cc: Burgess, Aaron

Subject: PI 0013733, Douglas County - Estimated Mitigation Cost for Concept Report

As requested, the estimated mitigation cost for the subject project is **<u>\$70,000</u>**. This estimate is based on a review of aerial photography, NWI mapping, and NRCS soil surveys and not an actual field verification. The total cost of mitigation credits could remain the same or change once the ecology field survey is complete.

If you should have any questions or need any additional information, please do not hesitate to contact me.

Respectfully,

Lisa Westberry

Special Projects Coordinator



Office of Environmental Services One Georgia Center, 16th Floor 600 West Peachtree Street, NW Atlanta, GA, 30308 404.631.1772

You take every precaution - wash your hands, social distance, wear a mask. So, if you must drive, consider this ... higher speeds make for more serious crashes. To decrease the odds of a serious crash increase the distance between you and the vehicle in front of you. And slow down to the posted speed limit. Drive Alert Arrive Alive, Georgia.

DEPARTMENT OF TRANSPORTATION STATE OF GEORGIA

INTERDEPARTMENT CORRESPONDENCE

FILE

Project No: n/a Office: District 7
County Douglas Date: June 1, 2020

P.I.# **0013733**

Description: SR 5/US 78 @ SR 6/US 278 - CFI

FROM Shun Pringle, District Utilities Manager

TO Davida White, Project Manager

SUBJECT PRELIMINARY UTILITY COST ESTIMATE

A review of utilities located on the above referenced project has been conducted with a design concept. Listed below is a breakdown of the anticipated reimbursable and non-reimbursable cost.

<u>Utility Owner</u>	Reimbursable	<u>Non-</u> <u>Reimbursable</u>	Estimate Based on
Georgia Power Company Distribution	\$225,000.00		Site Visit / Available Drawings
Georgia Power Company Transmission	\$500,000.00	\$0.00	Site Visit / Available Drawings
Greystone Power	\$150,000.00	\$0.00	Site Visit / Available Drawings
Comcast Communications/CATV	\$0.00	\$9,600.00	Site Visit / Available Drawings
Douglasville Douglas County Water and Sewer	\$0.00	\$44,000.00	Site Visit / Available Drawings
Cobb County Water System	\$0.00	\$44,000.00	Site Visit / Available Drawings
Austell Gas	\$0.00	\$96,000.00	Site Visit / Available Drawings
Bellsouth	\$100,000.00	\$100,000.00	Site Visit / Available Drawings
AT&T Telecommunications	\$0.00	\$0.00	Site Visit / Available Drawings
Sync Global	\$0.00	\$14,400.00	Site Visit / Available Drawings
Zayo	\$0.00	\$14,400.00	Site Visit / Available Drawings
Total 100.00%	\$975,000.00	\$322,400.00	
Department Responsibility 100.00%	\$975,000.00		
Local Sponsor Responsibility 0.00%	\$0.00		PFA Dated N/A with N/A

^{**} Indicates Potential Utility Aid Request from Local Gov't

Estimate is based on the best available information at the current stage, unforeseen prior rights information may be provided by the Utility Company at a later date that could cause some non-reimbursable costs to shift to the reimbursable cost column.

If additional information is needed, please contact Janique Jenkins at 770-216-3829.

cc: Patrick Allen, State Utilities Administrator
Marcela Coll, State Utilities Preconstruction Manager

Paul DeNard, District Preconstruction Engineer Lankston Johnson, Area Manager File



Interoffice Memo



Interoffice Memo

Design Phase Leader Validation of Final QC/QA for Construction Cost Estimate Used In This Revision to Programmed Costs:

Consultant Company or GDOT Design Office:	CDOT Office of Roadway Design
Consultant Company of GDOT Design Office.	GDOT Office of noadway Design
In	To a part to
Printed Name:	Steven Boockholdt
	To a second
Title:	Design Phase Leader
0: .	T
Signature:	
Б.	
Date:	
	FOR PROJECTS WITH A LOCAL SPONSOR
	nanager should ensure that the local authority completes the following validation indicating that it has reviewed s in concurrence with the construction costs presented.
Please select the appropriate validation below	upon review of the cost estimate:
I acknowledge that I have reviewed the property of the prop	roject construction cost estimate and concur with the costs presented.
I acknowledge that I have reviewed the process.	roject construction cost estimate but do not concur with the costs presented.
Please provide an explanation for non- concurrence.	
Local Authority Name and Title:	
Local Authority Signature:	
Date:	
Date.	
1	



Interoffice Memo

Cost Estimate Worksheet:

OUST ESTIN	iate worksnee	<u></u>									
CONSTRUC	TION COST EST	IMATE (Required	base estimate ente	red from CES	and should not in	nclude E&I). →				Α	\$ 10,261,259.57
ENGINEERII	NG AND INSPEC	TION (The default	t E&I percentage is 5	5.0%, but may	be adjusted per	project scope.) -	>			D	\$ 513,062.98
Constr	ruction Cost	E&I Pe	ercentage	E&	I Cost						
В С				BxC							
\$	10,261,259.57		5%	\$	513,062.98						
CONTINGEN	NCY (Refer to the	Risk and Conting	encies Table include	ed in GDOT Po	olicy 3A-9 Cost E	stimating Purpose	e) →			ı	\$ 2,154,864.51
Constr	ruction Cost	E&	I Cost	Constru	ction + E&I	Contingency	Percentage	Conting	ency Cost		
	E		F		E+F	Н			GxH		
\$	10,261,259.57	\$	513,062.98	\$	10,774,322.55	209	6	\$	2,154,864.51		
ASPHALT F	UEL PRICE ADJU	JSTMENT (Leave	blank if not applical	ble) →						Q	\$ 300,369.54
Date		Sep	2020								
Regular Unle	eaded		47/ GAL		Current Asph	alt Fuel Index Pric	es can be four	nd at the link belo	w:		
Diesel			71/ GAL		http://w	ww.dot.ga.gov/PS	S/Materials/Asp	ohaltFuelIndex			
Liquid AC		\$425.	00/ TON					Monthly			
Liquid AC		Tons	Percentage of Asphaltic Concrete	Tons of Asphaltic Concrete	Total Monthly Tonnage of Asphalt Cement (TMT)	Monthly Asphalt Cement Price month project let (APL)	Max. Cap	Asphalt Cement Price month placed (APM)	Price Adjustment (PA)		
	Description	J	К	L = J x K	M = Sum of Columns L, T & W	N	0	P = (N x O)+N	Q = [((P - N) / N)] x M x N		
	Leveling	0.00 TN	5.00%	0.00 TN	1177.92 TN	\$425.00/ TON	60%	\$ 680.00	\$ 300,369.54		
	Patching	0.00 TN	5.00%	0.00 TN	1						
	9.5 mm SP	0.00 TN	5.00%	0.00 TN	1						
	12.5 OGFC	0.00 TN	5.00%	0.00 TN							
	12.5 PEM 12.5 mm SP	0.00 TN	5.00% 5.00%	0.00 TN							
	19 mm SP	14937.00 TN 1311.00 TN	5.00%	746.85 TN 65.55 TN							
	25 mm SP	7208.00 TN	5.00%	360.40 TN							
Bituminous		Tack Coat	GL/TN	Tons							
Tack Coat	Description Tack Coat	1102 00 CI	S 232.8234 GL/TN	T = R/S 5.12 TN							
Bituminous	Tack Coat	1192.00 GL SY	GL/SY	5.12 IN							
Tack Coat (Surface				W = (U x V) / (232.8234							
Treatment)	Description	U	V	GL/TN)							
	Single Surface Treatment	0.00 SY	0.20 GI/SY	0.00 TN	-						
	Double Surface Treatment Triple	0.00 SY	0.44 GI/SY	0.00 TN	-						
	Surface Treatment	0.00 SY	0.71 GI/SY	0.00 TN							
CONSTRUC	TION TOTAL CO	ST →								X = A+D+I+Q	\$ 13,229,556.60
RIGHT OF W	VAY COST →									Y	\$ 698,000.00
UTILITIES C	OST (Provided by	/ Utility Office) →								Z = Sum of Reimbursable	\$ 975,000.00
	Utility Owner		Reimbursab	le Cost		Utility Owner		Reimbur	sable Cost	Costs	
Georgia Pow	er Company Distr	ibution	\$	225,000.00							
	ver Company Trans	smission	\$	500,000.00							
Greystone Po		T) /	\$	150,000.00							
	mmunications/CA Douglas County W		\$	-							
	y Water System	rater and sewer	\$								
Austell Gas			\$								
Bellsouth			\$	100,000.00							
AT&T Comm			\$	-							
Sync Global			\$	-							
Zayo			\$	-							

Project Cost Estimate

Concept Name: 0013733_CF Cost Estimate Name: 0013733_CFI_ALT1

Projects Cost Estimate

Processed on: Sep-30-2020 01:21 PM

CONCEPT NAME: 0013733_CFI COST ESTIMATE NAME: 0013733_CFI_ALT1

SPEC YEAR: 13

ITEM HISTORY:BHP-ALL - Statewide - 24 monthsDESCRIPTION:SR 5/US 78 @ SR 6/US 278 - CFIESTIMATE PHASE:2-DE - Designers Estimate

ITEMS FOR CONCEPT NAME 0013733_CFI

0100 - ROAD	DWAY					
Line Number	Item	Quantity	Units	Price	Description	Amount
5	150-1000	1.00	LS	\$350,000.00	TRAFFIC CONTROL - 0013733	\$350,000.00
10	153-1300	1.00	EA	\$110,000.00	FIELD ENGINEERS OFFICE TP 3	\$110,000.00
15	210-0100	1.00	LS	\$1,750,000.00	GRADING COMPLETE - 0013733	\$1,750,000.00
20	156-0100	1.00	LS	\$10,000.00	GPS DATA COLLECTION AND SUBMITTAL	\$10,000.00
25	150-5010	4.00	EA	\$7,939.03	TRAFFIC CONTROL, PORTABLE IMPACT ATTENUATOR	\$31,756.11
30	310-1101	8338.00	TN	\$39.68	GR AGGR BASE CRS, INCL MATL	\$330,827.83
35	402-3130	14937.00	TN	\$85.95	RECYCLED ASPH CONC 12.5 MM SUPERPAVE, GP 2 ONLY, INCL BITUM MATL & H LIME	\$1,283,819.91
40	402-3121	7208.00	TN	\$105.20	RECYCLED ASPH CONC 25 MM SUPERPAVE, GP 1 OR 2, INCL BITUM MATL & H LIME	\$758,297.46
45	402-3190	1311.00	TN	\$137.82	RECYCLED ASPH CONC 19 MM SUPERPAVE, GP 1 OR 2,INCL BITUM MATL & H LIME	\$180,684.54
50	413-0750	1192.00	GL	\$3.86	TACK COAT	\$4,595.89
55	432-0206	169135.95	SY	\$1.84	MILL ASPH CONC PVMT, 1 1/2 IN DEPTH	\$310,841.43
60	446-1100	2015.00	LF	\$6.41	PVMT REINF FABRIC STRIPS, TP 2, 18 INCH WIDTH	\$12,921.65
65	318-3000	200.00	TN	\$19.51	AGGR SURF CRS	\$3,901.70
70	441-0104	5156.00	SY	\$28.50	CONC SIDEWALK, 4 IN	\$146,963.48
75	441-0108	20.00	SY	\$75.74	CONC SIDEWALK, 8 IN	\$1,514.85
80	441-0018	891.00	SY	\$66.47	DRIVEWAY CONCRETE, 8 IN TK	\$59,222.90
85	441-4030	114.00	SY	\$66.85	CONC VALLEY GUTTER, 8 IN	\$7,620.36
90	441-0748	7640.00	SY	\$43.98	CONCRETE MEDIAN, 6 IN	\$335,975.72
95	441-6222	9536.00	LF	\$13.67	CONC CURB & GUTTER, 8 IN X 30 IN, TP 2	\$130,341.39
100	634-1200	20.00	EA	\$146.03	RIGHT OF WAY MARKERS	\$2,920.60
105	620-0100	2500.00	LF	\$43.99	TEMPORARY BARRIER, METHOD NO. 1	\$109,964.25
110	632-0003	2.00	EA	\$6,357.70	CHANGEABLE MESSAGE SIGN, PORTABLE, TYPE 3	\$12,715.40
ROADWAY Tot	tal					\$5,944,885.47

0200 - DRAINAGE

Line Number	Item	Quantity	Units	Price	Description	Amount			
115	550-1240	492.00	LF	\$49.09	STORM DRAIN PIPE, 24 IN, H 1-10	\$24,154.15			
120	550-1180	1888.00	LF	\$74.28	STORM DRAIN PIPE, 18 IN, H 1-10	\$140,235.16			
125	668-1100	14.00	EA	\$3,033.17	CATCH BASIN, GP 1	\$42,464.41			
130	550-4124	1.00	EA	\$565.01	FLARED END SECTION 24 IN, SIDE DRAIN	\$565.01			
135	615-1000	250.00	LF	\$305.18	JACK OR BORE PIPE - STEEL, 0.625-IN, 36-IN	\$76,294.94			
DRAINAGE Tot	DRAINAGE Total								

0300 - TEMPORARY EROSION CONTROL

Line Number	Item	Quantity	Units	Price	Description	Amount
140	163-0232	3.00	AC	\$299.80	TEMPORARY GRASSING	\$899.39
145	163-0301	2.00	EA	\$1,889.31	CONSTRUCT AND REMOVE CONSTRUCTION EXITS	\$3,778.62
150	165-0101	2.00	EA	\$582.84	MAINTENANCE OF CONSTRUCTION EXIT	\$1,165.67
155	163-0550	8.00	EA	\$241.22	CONSTRUCT AND REMOVE INLET SEDIMENT TRAP	\$1,929.74
160	165-0030	3000.00	LF	\$0.57	MAINTENANCE OF TEMPORARY SILT FENCE, TP C	\$1,724.46
165	165-0105	8.00	EA	\$83.83	MAINTENANCE OF INLET SEDIMENT TRAP	\$670.61
170	167-1000	3.00	EA	\$317.58	WATER QUALITY MONITORING AND SAMPLING	\$952.73
175	167-1500	30.00	MO	\$721.13	WATER QUALITY INSPECTIONS	\$21,633.79
180	171-0030	6000.00	LF	\$4.23	TEMPORARY SILT FENCE, TYPE C	\$25,408.86
185	643-8200	200.00	LF	\$2.86	BARRIER FENCE (ORANGE), 4 FT	\$572.61
TEMPORARY E	ROSION CON	TROL Tota	ıl			\$58,736.48

0400 PEDI	IANENT ED	201011 00	NTDOI			
0400 - PERN Line Number	Item	Quantity		_	Description	Amour
190	163-0240	117.00	_	\$186.02	•	\$21,764.1
195	700-6910	6.00	_		PERMANENT GRASSING	\$5,978.5
200	700-7000	12.00	_	-	AGRICULTURAL LIME	\$2,709.3
205	700-8000	2.00	_	-	FERTILIZER MIXED GRADE	\$1,120.8
210	700-8100	300.00	_	-	FERTILIZER NITROGEN CONTENT	\$1,824.
215	716-2000	3000.00	_		EROSION CONTROL MATS, SLOPES	\$5,403.
220	603-2181	10.00	_		STN DUMPED RIP RAP, TP 3, 18 IN	\$706.
225	700-9300	1166.00		\$8.18		\$9,537.
230	603-7000	20.00	-		PLASTIC FILTER FABRIC	\$109.4
235	711-0100	1684.00	_		TURF REINFORCING MATTING, TP 1	\$6,804.
PERMANENT E				Ţ	· · · · · · · · · · · · · · · · · · ·	\$55,958.
0600 - SIGN	NG					
ine Number	Item	Quantity	Units	Price D	escription	Amou
340	636-1036	20.00	SF	\$23.39 H	IGHWAY SIGNS, TP 1 MATL, REFL SHEETING, TP 11	\$467.
350	636-2090	50.00	LF	\$9.50 G	ALV STEEL POSTS, TP 9	\$475.
355	636-1033	100.00	SF	\$23.13 H	IGHWAY SIGNS, TP 1 MATL, REFL SHEETING, TP 9	\$2,313.
360	636-2070	50.00	LF	\$12.02 G	ALV STEEL POSTS, TP 7	\$600.
SIGNING Total						\$3,856.
0610 - PAVE	MENT MAR	KING				
Line Number	Item	Quantity	Units	Price	e Description	Amou
240	653-3501	16114.00	_		THERMOPLASTIC SKIP TRAF STRIPE, 5 IN, WHITE	\$4,913.
245	653-4501		GLM		THERMOPLASTIC SKIP TRAF STRIPE, 5 IN, WHITE	\$1,627.4
250	653-2501	0.92	_	1	4 THERMOPLASTIC SOLID TRAF STRIPE, 5 IN, WHITE	\$2,858.
255	653-1804	1696.00	_	1	THERMOPLASTIC SOLID TRAF STRIPE, 8 IN, WHITE	\$4,293.
260	653-1704	169.00	_	\$5.54		\$935.
265	653-6006	304.00	_		THERMOPLASTIC TRAF STRIPING, YELLOW	\$1,681.
270	653-6004	737.00	_	+	5 THERMOPLASTIC TRAF STRIPING, WHITE	\$3,943.
275	653-1502	4085.00	_	+	THERMOPLASTIC SOLID TRAF STRIPE, 5 IN, YELLOW	\$2,021.
280	654-1003	396.00	_	+	7 RAISED PVMT MARKERS TP 3	\$2,245.
285	653-0110	21.00	_		2 THERMOPLASTIC PVMT MARKING, ARROW, TP 1	\$2,014.
290	653-0120	7.00	_	+	4 THERMOPLASTIC PVMT MARKING, ARROW, TP 2	\$887.
295	653-0130	1.00	_	\$210.64		\$210.
300	655-6000	1.00	_	-	D PREFORMED PLASTIC PVMT MKG ARROW, CONTRAST (BLACK-WHITE), TP 1	\$1,200.
305	657-3054	9252.00			PREFORMED PLASTIC SKIP PVMT MKG, 5 IN, WHITE, TP PB	\$33,257.
310	657-1085	73.92	_	+	3 PREFORMED PLASTIC SOLID PVMT MKG, 8 IN, CONTRAST (BLACK-WHITE), TP PB	\$696.
315	657-1244	108.00	_		PREFORMED PLASTIC SOLID PVMT MKG, 24 IN, WHITE, TP PB	\$2,591.
320	657-1054	8826.00	_		D PREFORMED PLASTIC SOLID PVMT MKG, 5 IN, WHITE, TP PB	\$55,600.
325	657-7054	1.52		1	D PREFORMED PLASTIC SOLID PVMT MKG, 5 IN, YELLOW, TP PB	\$35,365.
330	657-5001	268.00	_	1	4 PREFORMED PLASTIC SOCIED FOR THINKS, STIN, TELLOW, TEELS 4 PREFORMED PLASTIC PAVEMENT MARKING, WHITE, TP PB	\$10,249.
335	657-5001	41.00			3 PREFORMED PLASTIC PAVEMENT MARKING, WHITE, IF PB	\$26,905.
165			_	-	D RAISED PVMT MARKERS TP 1	\$20,903. \$500.
PAVEMENT MA	654-1001	91.00	EA	φ5.50	J RAISED PVIVIT WARNERS IP I	
						\$193,999.
0700 - SIGN		Oucotite	Linita	D-:-	o Description	A
ine Number	Item	Quantity			e Description	Amou
345	639-3004	6.00			9 STEEL STRAIN POLE, TP IV	\$76,852.
370	647-1000	1.00			0 TRAFFIC SIGNAL INSTALLATION NO - CFI SIGNAL 1	\$115,000.
375	647-1000	1.00			0 TRAFFIC SIGNAL INSTALLATION NO - CFI SIGNAL 2	\$115,000.
380	647-1000	1.00	LS	\$115,000.0	0 TRAFFIC SIGNAL INSTALLATION NO - CFI SIGNAL 3	\$115,000.

Line Number	Item	Quantity	Units	Price	Description	Amount
345	639-3004	6.00	EA	\$12,808.79	STEEL STRAIN POLE, TP IV	\$76,852.77
370	647-1000	1.00	LS	\$115,000.00	TRAFFIC SIGNAL INSTALLATION NO - CFI SIGNAL 1	\$115,000.00
375	647-1000	1.00	LS	\$115,000.00	TRAFFIC SIGNAL INSTALLATION NO - CFI SIGNAL 2	\$115,000.00
380	647-1000	1.00	LS	\$115,000.00	TRAFFIC SIGNAL INSTALLATION NO - CFI SIGNAL 3	\$115,000.00
410	647-1000	1.00	LS	\$115,000.00	TRAFFIC SIGNAL INSTALLATION NO - CFI SIGNAL 4	\$115,000.00
415	647-1000	1.00	LS	\$115,000.00	TRAFFIC SIGNAL INSTALLATION NO - CFI SIGNAL 5	\$115,000.00
420	647-1000	1.00	LS	\$115,000.00	TRAFFIC SIGNAL INSTALLATION NO - CFI SIGNAL 6	\$115,000.00
SIGNALS Total						\$766,852.77

<u>0801 - BRIDGE</u>

BRIDGE Total						\$1,659,900.00
385	543-9000	1.00	LS	\$1,659,900.00	CONSTRUCTION OF BRIDGE COMPLETE - BRIDGE WIDENING OVER SWEETWATER CREEK	\$1,659,900.00
Line Number	Item	Quantity	Units	Price	Description	Amount

<u>0901 - WALL</u>

Line Number	Item	Quantity	Units	Price	Description	Amount
390	627-1000	7300.00	SF	\$58.00	MSE WALL FACE, 0 - 10 FT HT, WALL NO - 1	\$423,409.86
395	627-1010	10950.00	SF	\$62.17	MSE WALL FACE, 10 - 20 FT HT, WALL NO - 1	\$680,765.77

Line Number	Item	Quantity	Units	Price	Description	Amount
400	627-1100	182.00	LF	\$109.48	COPING A, WALL NO - 1	\$19,924.78
405	627-1160	548.00	LF	\$308.86	TRAFFIC BARRIER H, WALL NO - 1	\$169,256.17
WALL Total						\$1,293,356.58

TOTALS FOR CONCEPT NAME 0013733_CFI

ITEMS COST:	\$10,261,259.57
TYPICAL SECTION:	\$0.00
ESTIMATED COST:	\$10,261,259.57
CONTINGENCY PERCENT:	
ENGINEERING AND INSPECTION:	
ESTIMATED COST WITH CONTINGENCY AND E&I:	

CONFIDENTIALITY NOTICE: This document may contain confidential and/or privileged information. Any unauthorized duplication, disclosure, distribution/retransmission of taking of any action in reliance upon the material in this document is strictly forbidden.

GEORGIA DEPARTMENT OF TRANSPORTATION PRELIMINARY ROW COST ESTIMATE SUMMARY

Date: Revised:	9/10/20	5	NA DOUGLAS 0013733	
Description: Project Termini:	SR 5 / US 78 @ SR6/US 2			
rroject termini.			Existing ROW:	Varies
Parcels:	17		Required ROW:	
765A76000 _1168F660-00	and and Improvements		\$250 556 25	
	and and Improvements		, 3233,330.23	
	Proximity Damage			
	Consequential Damage			
	Cost to Cures			
	Trade Fixtures			
	Improvements	A TO SEE THE PARTY OF THE PARTY	1	
	Valuation Services		__ \$116,875.00	
	Legal Services		\$123,975.00	
	Relocation		_\$51,000.00	
	Demolition		<u></u> \$0.00	
	Administrative		_\$146,500.00	
ר	TOTAL ESTIMATED COSTS	·····	_\$697,906.25	
TOTAL ESTIMA	ATED COSTS (ROUNDED)		_\$698,000.00	
Prepared By:	Cheryl Worthy Pickett	Ch	al Thof Pickett	9/10/20
	Print Name	0	Signature	Date
Cost Estimation Supervisor :	Valencia Car	ler Va	Dereir Cat	7
	Print Name	3	Signature	Date
NOTE: Superviser is only attest	ting that the estimate was o	ompleted using the cor	rect information provide	d for the the project.

NOTE: Superviser is only attesting that the estimate was completed using the correct information provided for the the project. The Supervisor is not attesting to property values or the accuracy of the market value estimations provided in this report. No Market Appreciation is included in this Preliminary Cost Estimate.

Comments: Parcel 17 is not labeled on plan but has a driveway easement; added to parcel count.

Hardman, Lilian

From: Westberry, Lisa

Sent: Wednesday, September 30, 2020 9:44 AM

To: White, Davida; Boockholdt, Steven C; Hardman, Lilian

Subject: PI 0013733, Douglas County - Estimated Mitigation Cost for Concept Report (Second

Alternative)

Good morning,

As requested, the estimated mitigation cost for a proposed second alternative on the subject project is **\$100,000**. This estimate is based on a review of aerial photography, NWI mapping, and NRCS soil surveys and not an actual field verification. The total cost of mitigation credits could remain the same or change once the ecology field survey is complete.

If you should have any questions or need any additional information, please do not hesitate to contact me.

Respectfully,

Lisa Westberry

Special Projects Coordinator



Office of Environmental Services One Georgia Center, 16th Floor 600 West Peachtree Street, NW Atlanta, GA, 30308 404.631.1772

Vote daily for Columbus Riverwalk, on the banks of the Chattahoochee River, as the People's Choice. Riverwalk was named a top twelve finalist in AASHTO's 2020 America's Transportation Awards. The People's Choice Award is decided by online popular vote. Help GDOT bring home national recognition and a \$10,000 award that will be donated to charity. Vote online once a day per device (laptop, tablet or mobile) through Oct. 25. Ask your coworkers, family and friends to vote too. Visit www.dot.ga.gov for a direct voting link.

4. CONCEPT UTILITY REPORT

Original Version: May 24, 2013 Revision: Feb. April 5, 2018

Concept Utility Report

Project Number: N/A	District: 7
County: Douglas	Prepared by: Janique Jenkins
P.I. # 0013733	Date: 05/22/2020
Project Description: SR 5/US 78 @ SR 6/US 2	278 - CFI
The information provided herein has been gathered from G in this report is to be used as a substitute for 1 st Submission	Georgia811and/or field visits and serves as an estimate. Nothing contained or SUE.
Are SUE services recommended? Yes	
Level: ⊠A □B □C □D	
Public Interest Determination (PID):	
☐ Automatic ☐ Mandatory ☐ Consideration	on □ No Use □Exempt
Is a separate utility funding phase recommended? Y	es
	are at least 2 Transmission poles that could potentially be impacted onal outage blackout dates when they cannot do shutoff work which
Capital Improvement Projects (Utilities) Anticipated	in the Area: N/A
is longer being widened, depending on logical termin	Mitigation: There is a pumping station SW of the bridge. If the bridge is and the impact of the construction approaching bridge, we in and relocation of the pumping station. Design in any locations that power poles is highly recommended.
,	/W coordination in the Northeast quadrant of the intersection of SR 6 eed to be R/W coordination in places where utility companies may
Environmental Coordination: N/A	
Additional Remarks: Any acquired ROW or easemen	ts need to be purchased with the right to place & maintain utilities.

Original Version: May 24, 2013 Revision: Feb. March 8, 2018

Utilities have facilities within the project limits.

Utilities have been identified using Georgia811 and/or field visits.

Facility Owner	Existing Facilities/ Appurtenances	General Description of Location	Facilities to Avoid approx. limits	Facilities Retention Recommended approx. limits	Comments
Austell Gas					In area
ATT Long Distance					In area
Bellsouth					In Area
Douglasville Douglas County Water and Sewer			Avoid impacts to Pump Station	Retain facilities underground attached to pump station.	Confirmed in Area
Cobb County Water System					In Area
Greystone Power		Multiple poles along all 4 quadrants			
Georgia Power Distribution		Multiple poles along all 4 quadrants			
Georgia Power Transmission			Avoid impacts to poles		2 potential poles to be relocated; \$500,000
Comcast		Attached to GPCD poles			
Zayo Fiber					In Area
Sync Global		Underground facilities along south leg of SR6			Confirmed in Area
Level 3					Possibly In area
Communications Colonial Pipeline					Possibly In area
Plantation Pipeline					Possibly In area

Note: To add additional rows, click the bottom right corner of the box above, then click the blue + that will appear. Please add additional rows prior to entering text.

5 CDASH SHIMMADIES AND DIACDAMS
5. CRASH SUMMARIES AND DIAGRAMS



Date Time County Route	IntersectingRoute Injuries	Fatalities	s MannerOfColli	sig LocationOfImpact	FirstHarmfulEvent	Light	Surface	DirVeh1	DirVeh2	MnvrVeh1	MnvrVeh2	U1Factors	U2Factors	U1FirstHarmfulEvent	U2FirstHarmfulEvent
3/17/2017 17:32:00 DOUGLAS N OF SR 8 SR 6 S	intersecting Route Injuries	1	0 Rear End	On Roadway - Non-Intersection	Motor Vehicle In Motion	Daylight	Drv	South	South	Straight	Stopped	No Contributing Factors	No Contributing Factors	OTFIISTHAITHIUIEVEIIT	OZI II STRAITHIULEVERIT
4/26/2017 18:00:00 DOUGLAS SR 6		1	0 Rear End	On Roadway - Non-Intersection	Motor Vehicle In Motion	Daylight	Dry	North	North	Straight	Stopped	No Contributing Factors	No Contributing Factors		
6/9/2017 10:55:00 DOUGLAS E OF 6 SR 8		1	0 Angle	On Roadway - Non-Intersection	Motor Vehicle In Motion	Daylight	Dry	West	East	Changing Lanes	Straight	No Contributing Factors	No Contributing Factors		
6/9/2017 20:02:00 DOUGLAS SR 6	SR 5	1	0 Rear End	On Roadway - Non-Intersection	Motor Vehicle In Motion	Daylight	Dry	North	North	Straight	Straight	No Contributing Factors	No Contributing Factors		
0/3/2017 20:02:00 DOUGLAS SN 0	31.3		Not A Collision	Officadway Not intersection	WOOD VEHICLE III WOOLOII	Dayiigiit	Diy	1401 (11	1401111	Straight	Straight	140 contributing ructors	140 Contributing Factors		
			with Motor												
6/17/2017 11:45:00 DOUGLAS BEFORE 5 8 SR 6 S		1	0 Vehicle	On Roadway - Non-Intersection	Overturn	Daylight	Dry	North		Straight		No Contributing Factors			
6/23/2017 22:08:00 DOUGLAS SR 6	SR 5	1	0 Angle	On Roadway - Non-Intersection	Motor Vehicle In Motion	DarkNot Lighted	•	North	West	Turning Right	Straight	No Contributing Factors	No Contributing Factors		
8/4/2017 16:04:00 DOUGLAS AT BOWDEN SR 5 ST		1	0 Angle	On Roadway - Non-Intersection	Motor Vehicle In Motion	Daylight	Drv		East		Stopped		No Contributing Factors		
9/9/2017 12:39:00 DOUGLAS SR 6	SR 5	1	0 Rear End	On Roadway - Non-Intersection	Motor Vehicle In Motion	Daylight	Drv	East	East	Straight	Stopped	No Contributing Factors	No Contributing Factors		
9/25/2017 21:04:00 DOUGLAS SR 6	SR 5	1	0 Rear End	On Roadway - Non-Intersection	Motor Vehicle In Motion	DarkLighted	Dry	South	North	Straight	Entering/Leaving Parking	No Contributing Factors	No Contributing Factors		
10/12/2017 21:16:00 DOUGLAS SR 5	SR 6	1	0 Rear End	On Roadway - Non-Intersection	Motor Vehicle In Motion	DarkNot Lighted	•	South	South	Turning Right	Entering/Leaving Parking	No Contributing Factors	No Contributing Factors		
10/31/2017 7:39:00 DOUGLAS BANKHEAD HWY NEAR SR	16	1	0 Rear End	On Roadway - Non-Intersection	Motor Vehicle In Motion	Dawn	Drv	East	East	Straight	Stopped	No Contributing Factors	No Contributing Factors		
11/26/2017 20:22:00 DOUGLAS SR 5		1	0 Rear End	On Roadway - Non-Intersection	Motor Vehicle In Motion	DarkNot Lighted	Dry	North	North	Straight	Stopped	No Contributing Factors	No Contributing Factors		
11/22/2017 18:53:00 DOUGLAS NEAR SR6 SR 5		1	0 Rear End	On Roadway - Non-Intersection	Motor Vehicle In Motion	DarkNot Lighted		West	West		,	No Contributing Factors	No Contributing Factors		
12/26/2017 14:25:00 DOUGLAS PAST 6 SR 8 W		1	0 Angle	On Roadway - Non-Intersection	Motor Vehicle In Motion	Daylight	Dry	West	West	Straight	Stopped	No Contributing Factors	No Contributing Factors		
1/11/2018 14:44:00 DOUGLAS SR 5	SR 6	1	0 Rear End	On Roadway - Non-Intersection	Motor Vehicle In Motion	Daylight	Wet	East	East	Changing Lanes	Stopped	No Contributing Factors	No Contributing Factors		
3/23/2018 17:33:00 DOUGLAS SR 6	SR 5	1	0 Angle	On Roadway - Non-Intersection	Motor Vehicle In Motion	Daylight	Dry	East	West	Turning Left	Straight	No Contributing Factors	No Contributing Factors		
3/27/2018 19:13:00 DOUGLAS SR 5	SR 6	1	0 Rear End	On Roadway - Non-Intersection	Motor Vehicle In Motion	Daylight	Dry	West	West	Turning Right	Entering/Leaving Parking	No Contributing Factors	No Contributing Factors		
4/5/2018 11:10:00 DOUGLAS SR 5	SR 6	1	0 Head On	On Roadway - Non-Intersection	Motor Vehicle In Motion	Daylight	Dry	North	South	Turning Left	Straight	No Contributing Factors	No Contributing Factors		
												No Contributing			
4/10/2018 18:17:00 DOUGLAS SR 5	SR 6	1	0 Rear End	On Roadway - Non-Intersection		Daylight	Dry	South	South	Straight	Other	Factors, Following too Close	No Contributing Factors	Motor Vehicle In Motion	Motor Vehicle In Motion
5/13/2018 13:29:00 DOUGLAS SR 5	SR 6	1	0 Rear End	On Roadway - Roadway Intersection		Daylight	Dry	West	West	Turning Right	Stopped	Following too Close	No Contributing Factors	Motor Vehicle In Motion	Motor Vehicle In Motion
												No Contributing			
5/18/2018 12:18:00 DOUGLAS SR 5	SR 6	1	0 Rear End	On Roadway - Non-Intersection		Daylight	Dry	West	West	Straight	Straight	Factors, Following too Close	No Contributing Factors	Motor Vehicle In Motion	Motor Vehicle In Motion
												No Contributing			
												Factors, Changed Lanes			
8/11/2018 8:51:00 DOUGLAS SR 6	SR 5	1	0 Rear End	On Roadway - Non-Intersection		Daylight	Dry	South	South	Changing Lanes	Stopped	Improperly	No Contributing Factors	Motor Vehicle In Motion	Motor Vehicle In Motion
11/26/2018 18:08:00 DOUGLAS 3050 BANKHEAD HWY		1	0 Angle	On Roadway - Non-Intersection		DarkLighted	Dry	North	East	Turning Left	Straight	Failed to Yield	No Contributing Factors	Motor Vehicle In Motion	Motor Vehicle In Motion
12/13/2018 16:47:00 DOUGLAS SR 6	SR 5	1	0 Angle	On Roadway - Non-Intersection		Dusk	Dry	North	South	Turning Left	Straight	Failed to Yield	No Contributing Factors	Motor Vehicle In Motion	Motor Vehicle In Motion
												Following too Close,Other			
12/24/2018 22:32:00 DOUGLAS SR8 NEAR SR6 SR 5		1	0 Rear End	On Roadway - Non-Intersection		DarkNot Lighted	Dry	East	East	Straight	Stopped	Interior Distraction (Di	No Contributing Factors	Motor Vehicle In Motion	Motor Vehicle In Motion
												Following too			
												Close,Inattentive or Other			
12/25/2018 20:36:00 DOUGLAS AT 5 SR 6		1	0 Rear End	On Roadway - Non-Intersection		DarkNot Lighted	Dry	East	East	Straight	Stopped	Distracti	No Contributing Factors	Motor Vehicle In Motion	Motor Vehicle In Motion
10 (0.10 10 10 10 10 10 10 10 10 10 10 10 10 1												No Contributing			
12/31/2018 13:43:00 DOUGLAS SR 6		1	0 Angle	On Roadway - Roadway Intersection		Daylight	Dry	East	West	Turning Left	Straight	Factors, Failed to Yield	No Contributing Factors	Motor Vehicle In Motion	Motor Vehicle In Motion
4/28/2019 11:45:00 DOUGLAS SR 5		1	0 Angle	On Roadway - Non-Intersection		Daylight	Dry	North	East	Turning Right	Straight	Failed to Yield	No Contributing Factors	Motor Vehicle In Motion	Motor Vehicle In Motion
F/A/2040 C FC 00 DOLLGLAG THODATON TO THE			0.4	0.0.1		5 P. L.	_	6 11		T	60	No Contributing	N. C	A4.1	***************************************
5/1/2019 6:56:00 DOUGLAS THORNTON RD HWY 78		1	0 Angle	On Roadway - Roadway Intersection		Daylight	Dry	South	North	Turning Left	Straight	Factors, Failed to Yield	No Contributing Factors	Motor Vehicle In Motion	Motor Vehicle In Motion
												No Contributing			
C/22/2010 1E:20:00 DOLLCLAS CD C		1	0.0	On Boodings, Non-Intersection		Davidaba	D	C4h	C4h	Chamana	Channel	Factors, Following too	No Contailentine Foot	Make Wielele In Martin	Marker Welkiele In Marit
6/22/2019 15:29:00 DOUGLAS SR 6		T	0 Rear End	On Roadway - Non-Intersection		Daylight	Dry	South	South	Stopped	Stopped	Close,Driver Condition	No Contributing Factors	Motor Vehicle In Motion	Motor Vehicle In Motion

Roadways: SR 6 - Principal Arteri	ai; SK 5 - Minoi	Arteria			
Collision Type	2014	2015	2016	2017	2018
Rear End	19	40	62	45	48
Side Swipe - Same Direction	4	8	11	9	10
Side Swipe - Opposite Direction	0	1	0	0	1
Head On	0	4	4	3	3
Not a Collision With a Motor Vehicle	0	2	3	1	3
Angle	7	21	30	29	39
Total	30	76	110	87	104
Statewide Average - Principal Arterial - Non Freeway - Urbanized	150	167	200	177	210
Statewide Average - Minor Arterial - Urbanized	163	248	239	217	238

6.	DESIGN TRAFFIC DIAGRAMS

Department of Transportation State of Georgia

INTERDEPARTMENT CORRESPONDENCE

FILE Douglas County OFFICE Planning

P.I. # 0013733

DATE 8/6/2018

FROM Paul Tanner, State Transportation Planning Administrator

TO Kimberly W. Nesbitt, State Program Delivery Administrator

Attention: Andrea Smith-Calloway

SUBJECT Design Traffic Forecasts for SR 5/US 78 @ SR 6/US 278 - CFI

The approved design traffic forecasts for the above project are attached in

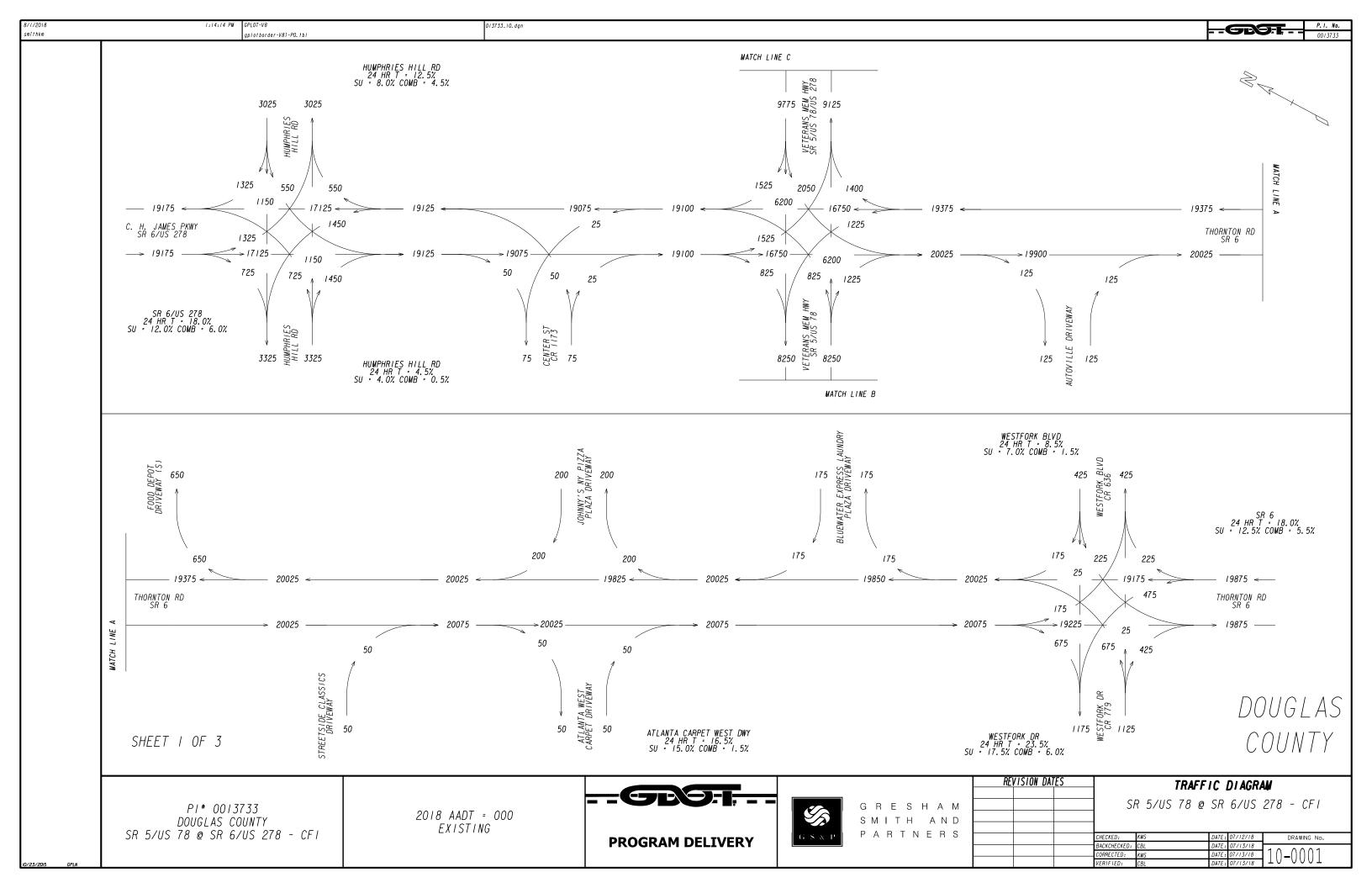
0013733 10.pdf and 0013733 10.dgn.

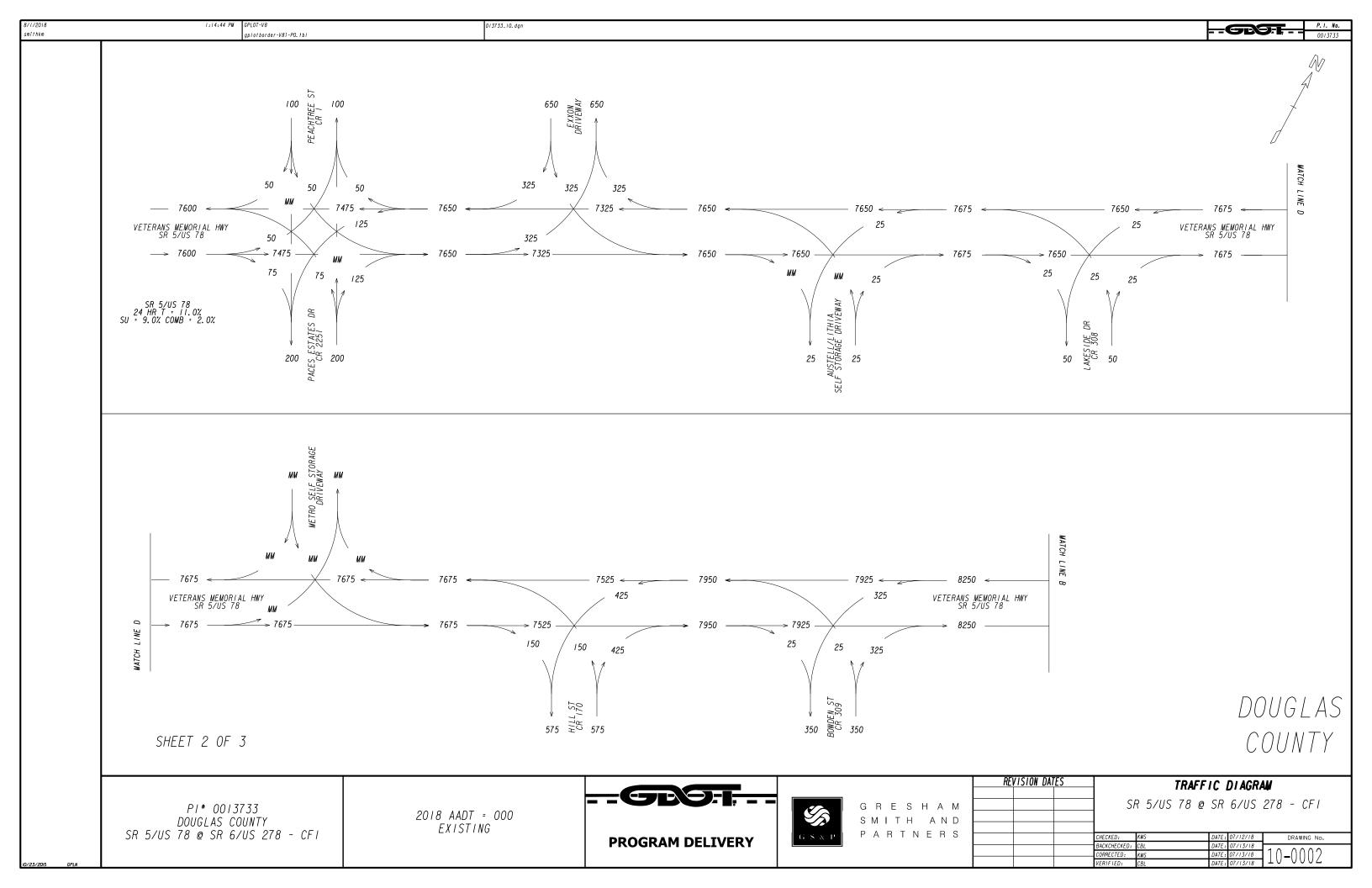
If you have any questions concerning this information please contact

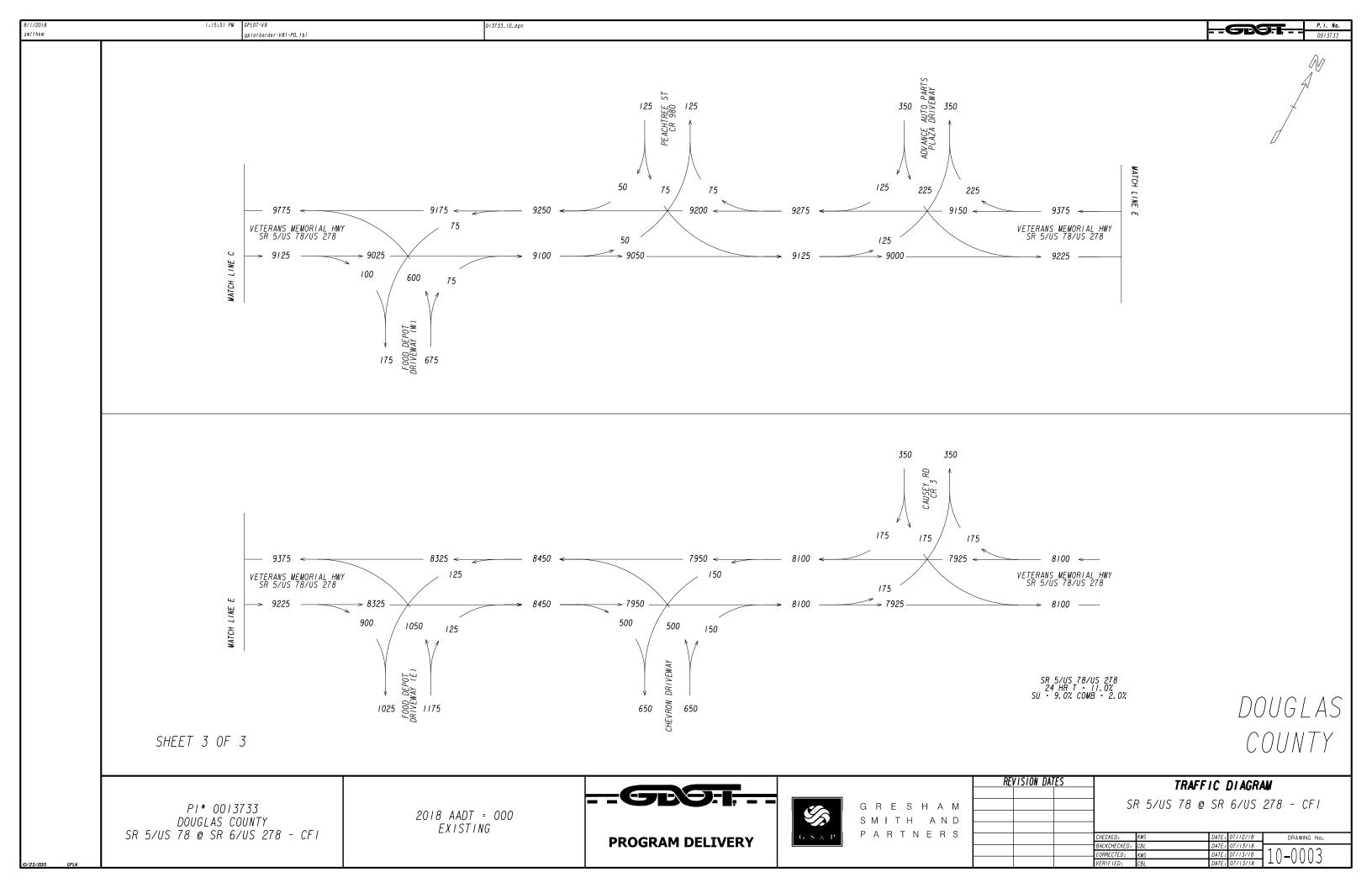
Andre Washington at 404-631-1925.

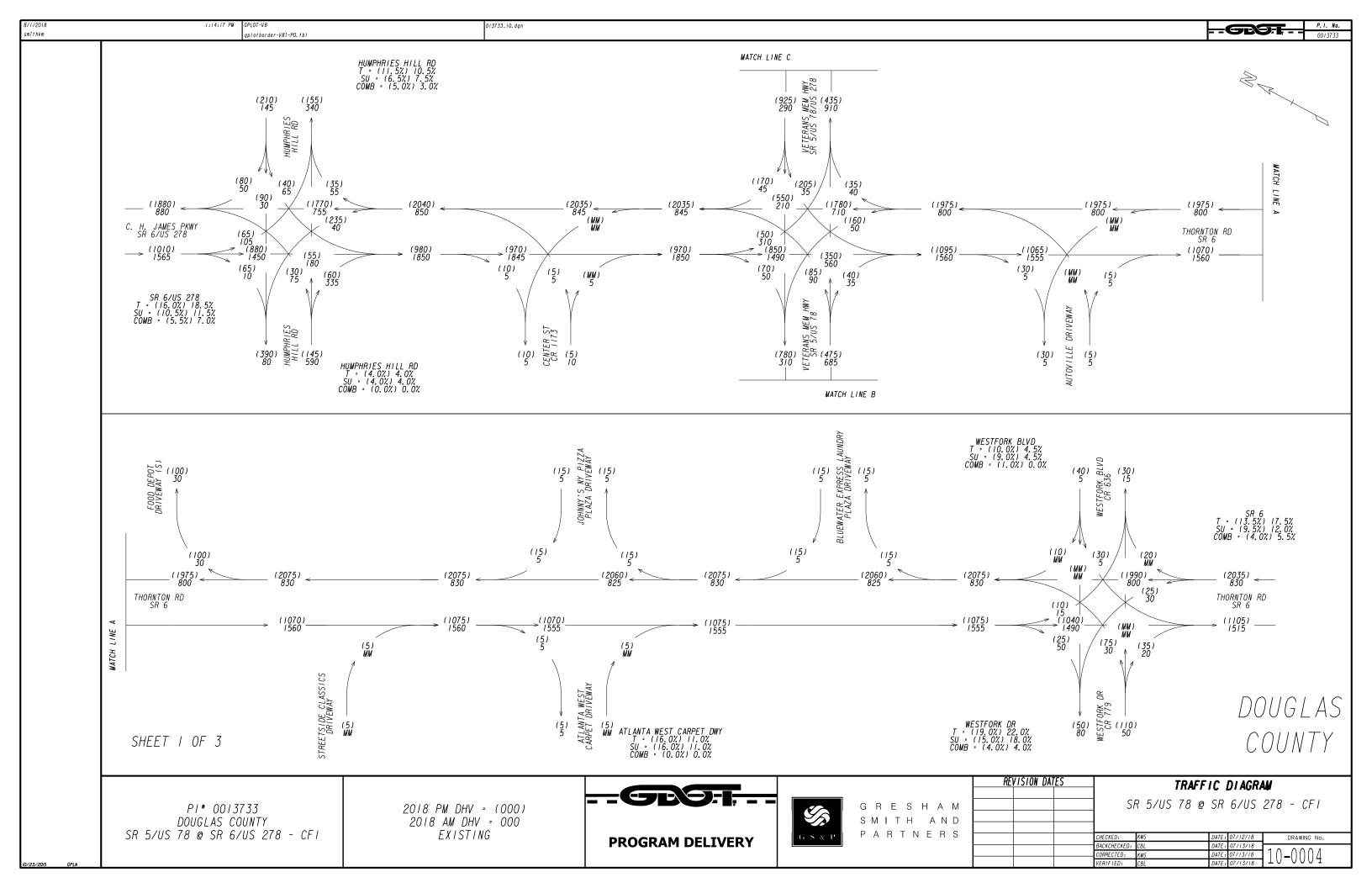
Nithin Gomez Gresham, Smith and Partners Design Traffic Review Consultant to GDOT 678-478-3350

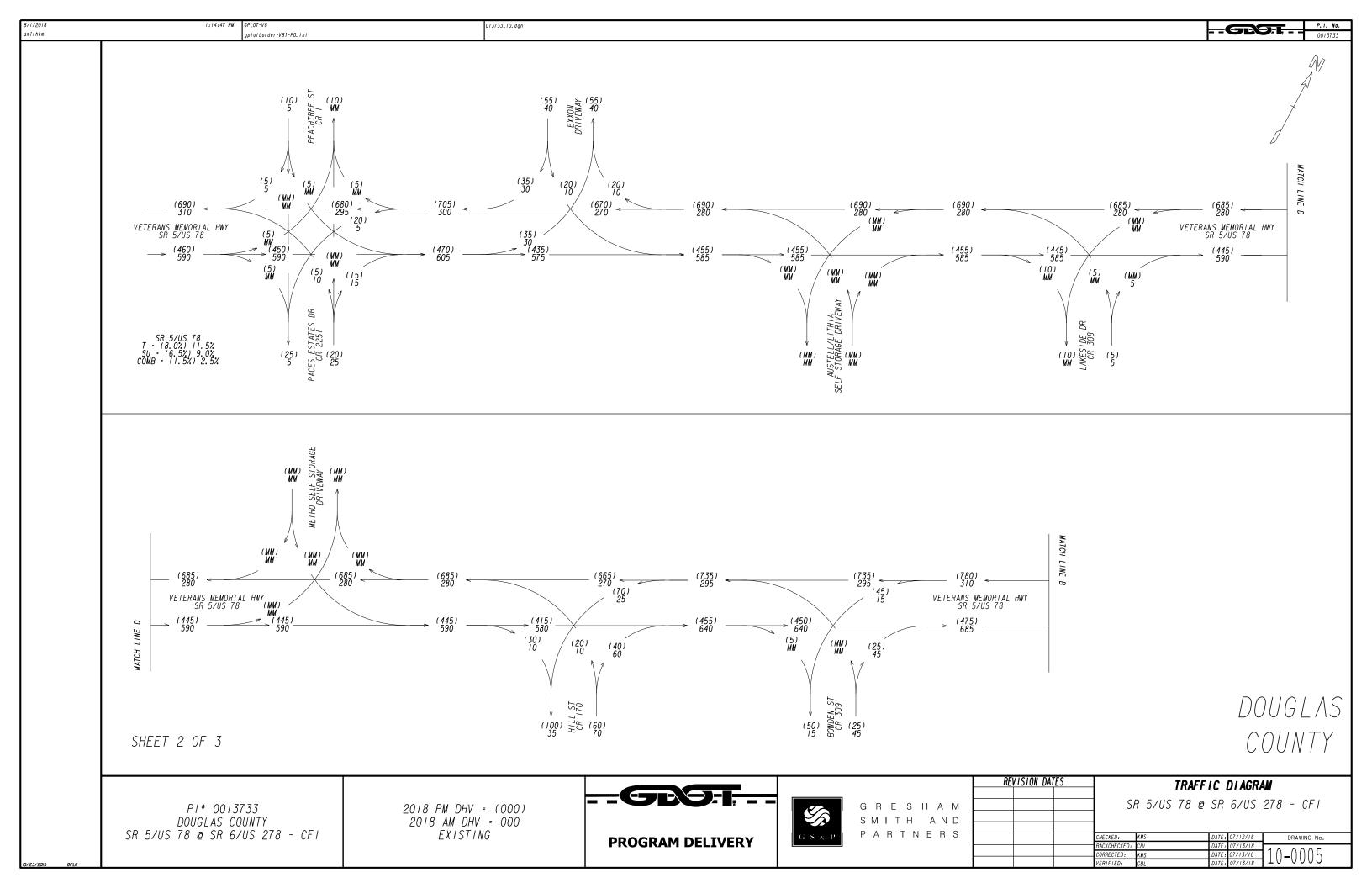
PT/NMG

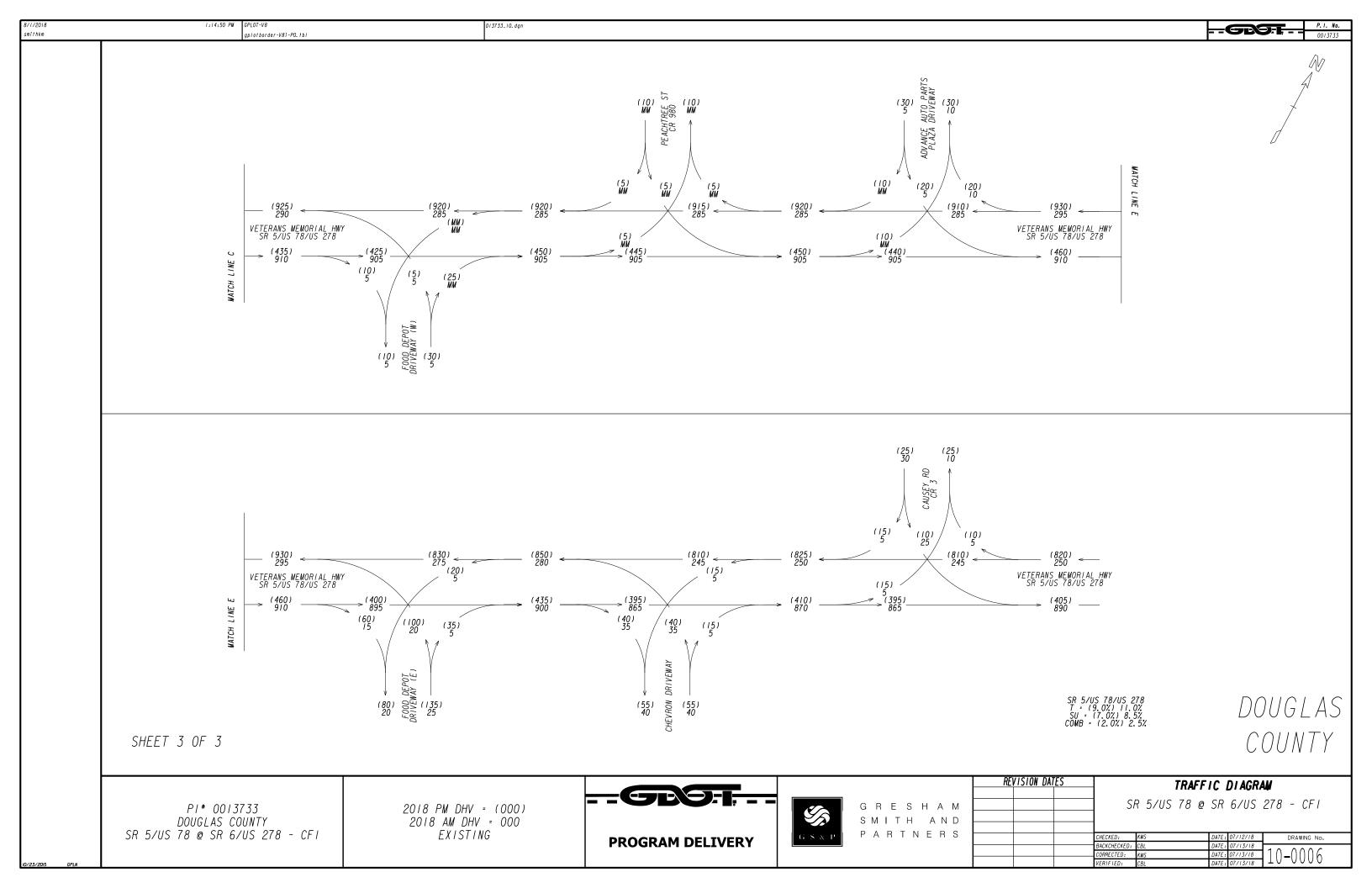


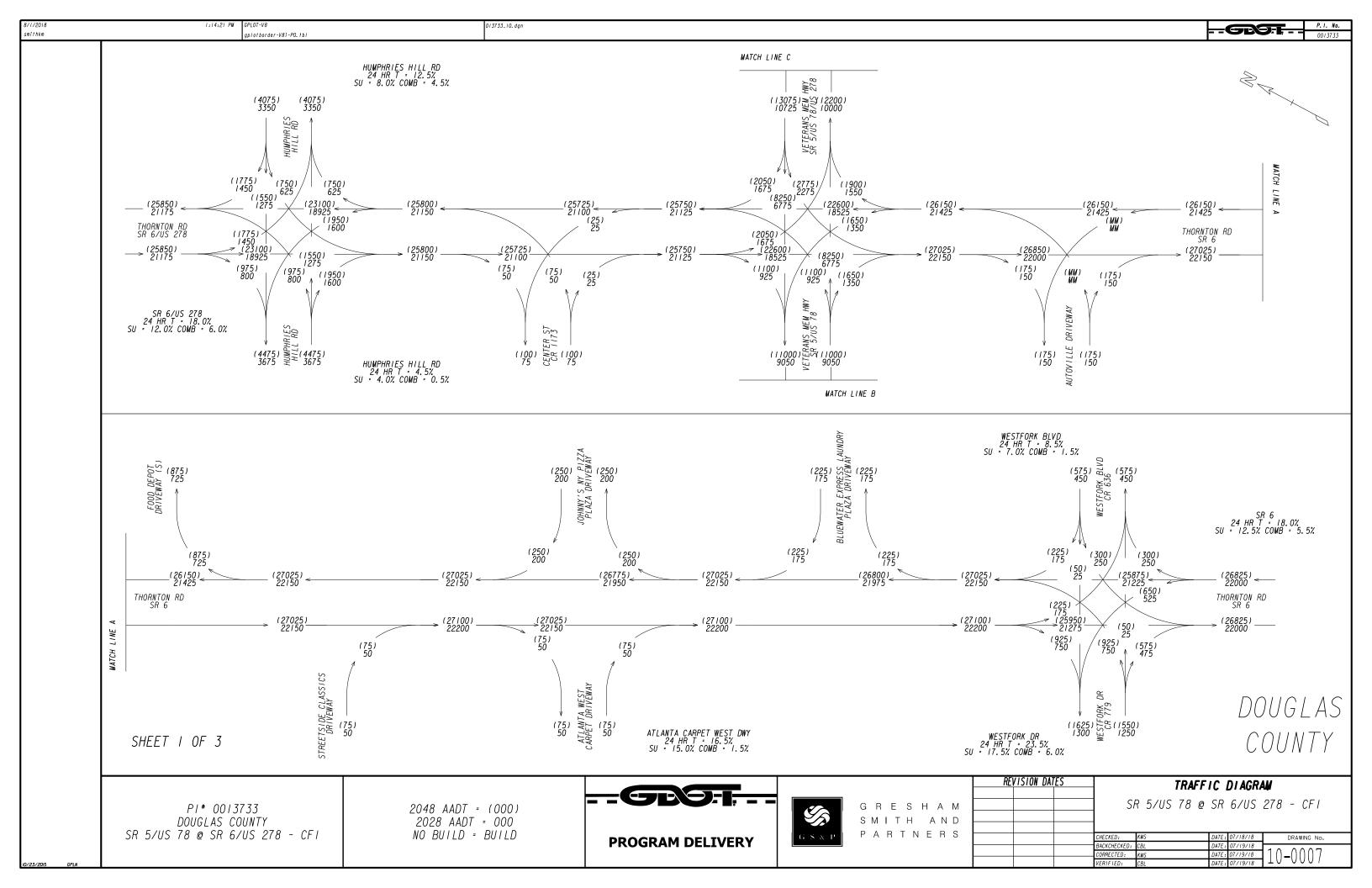


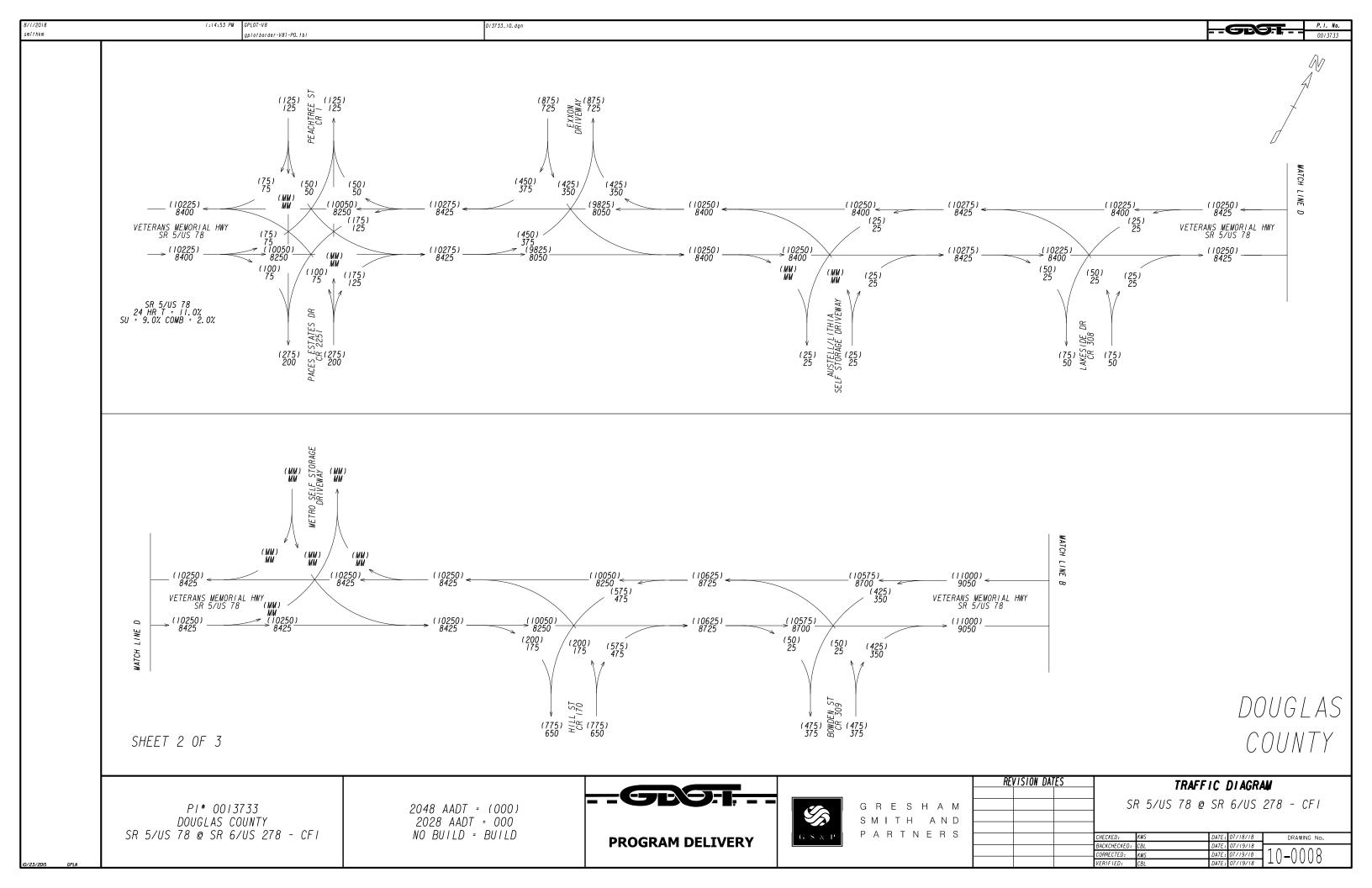


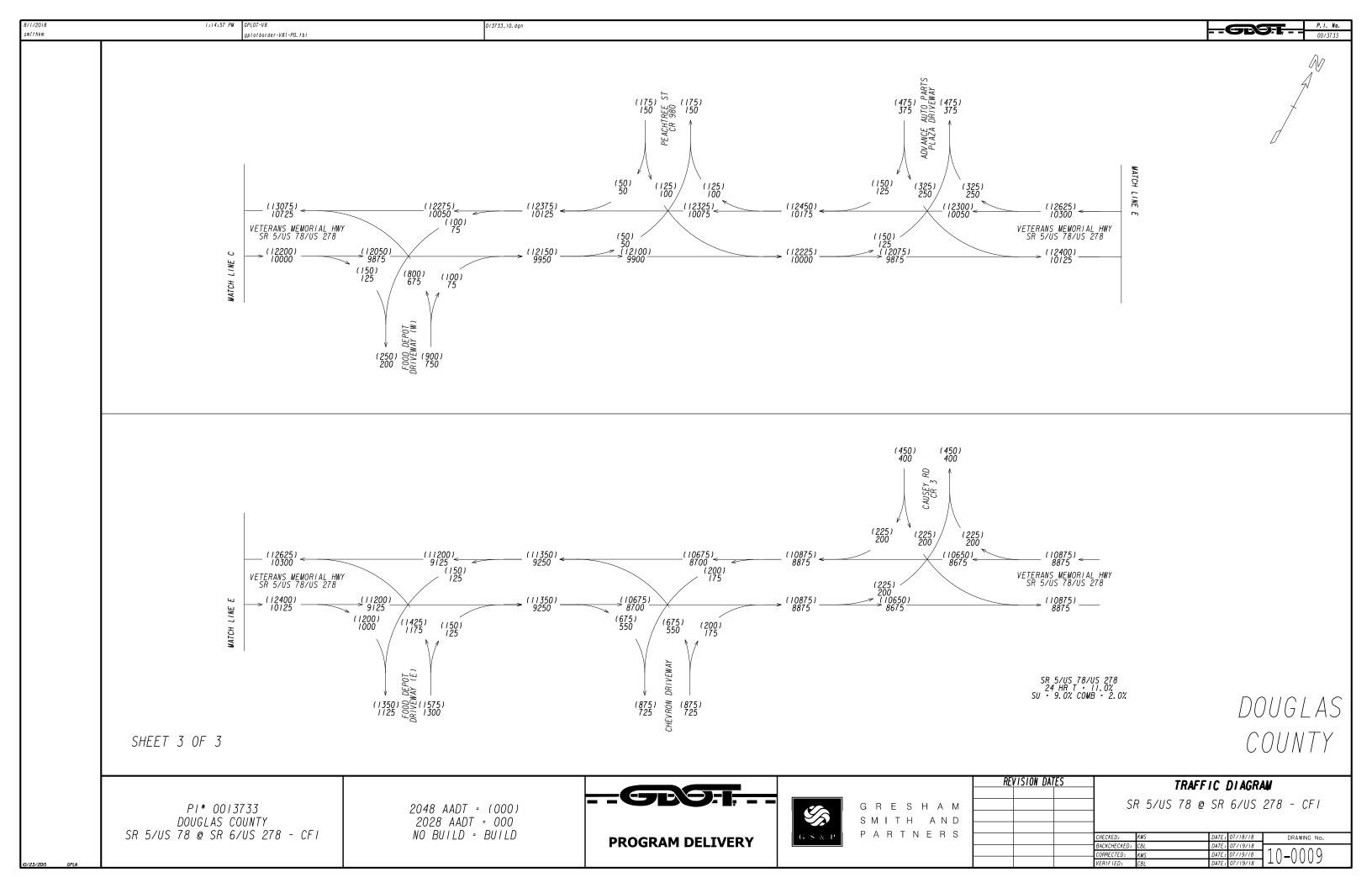


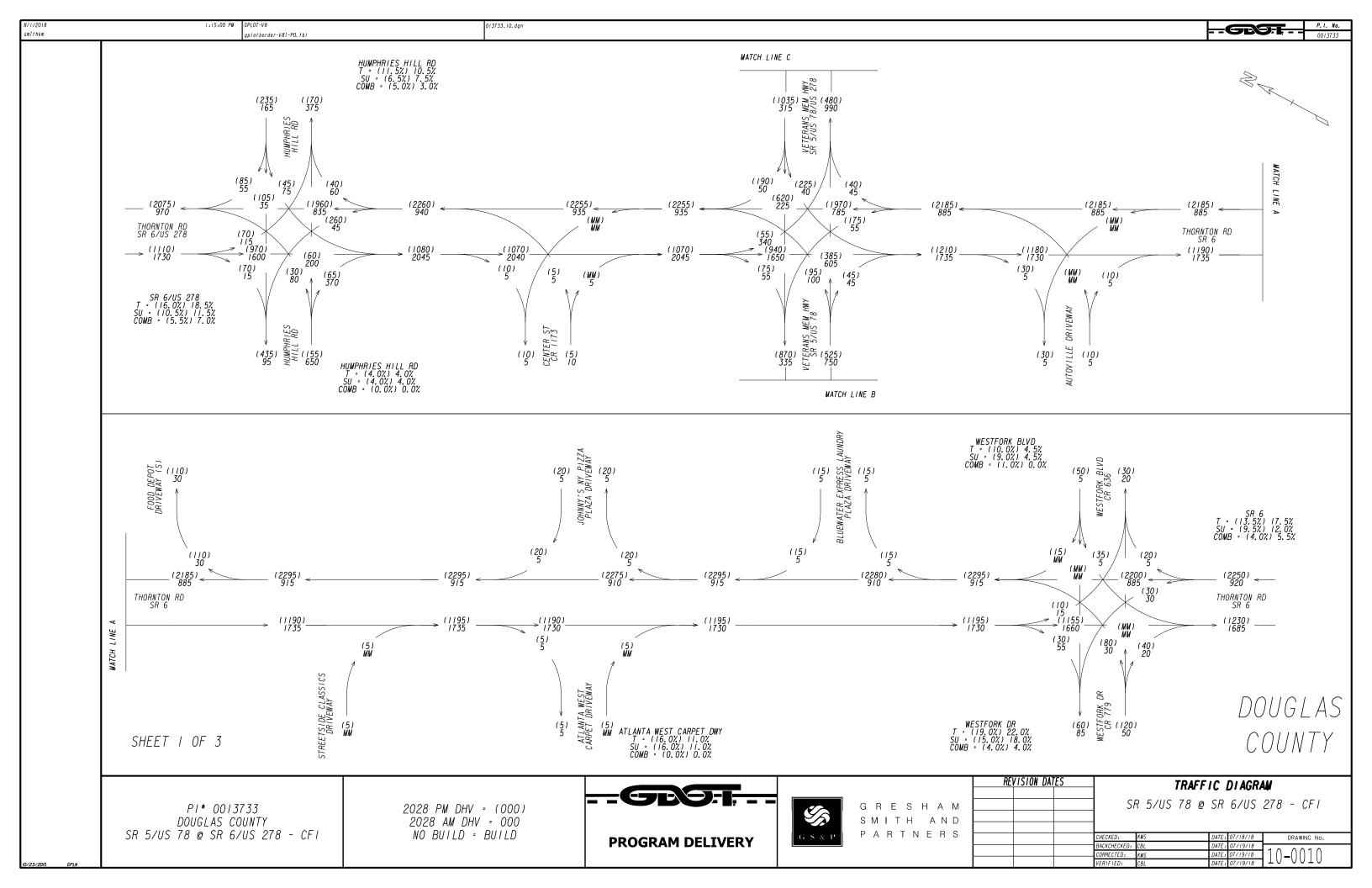


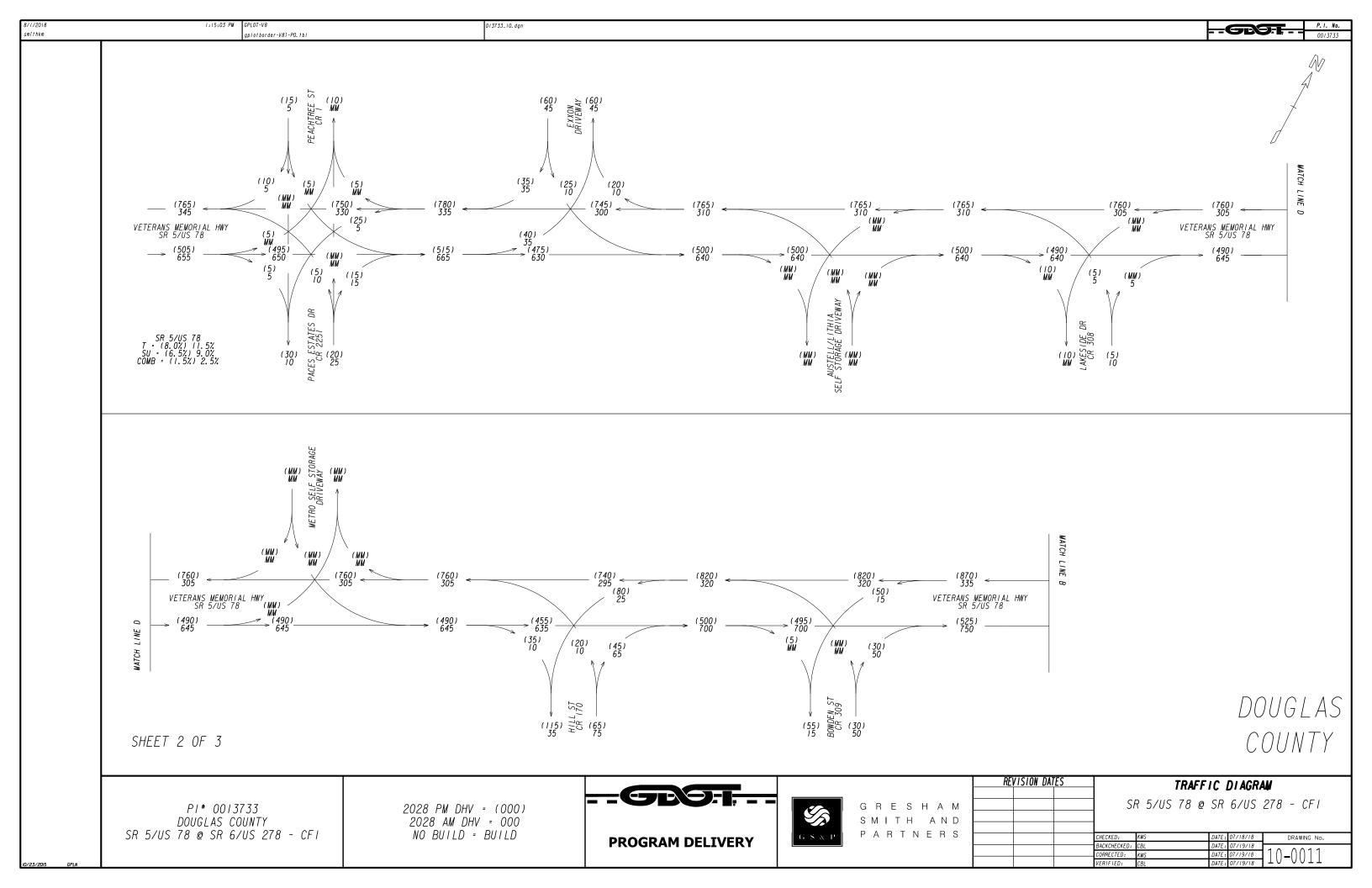


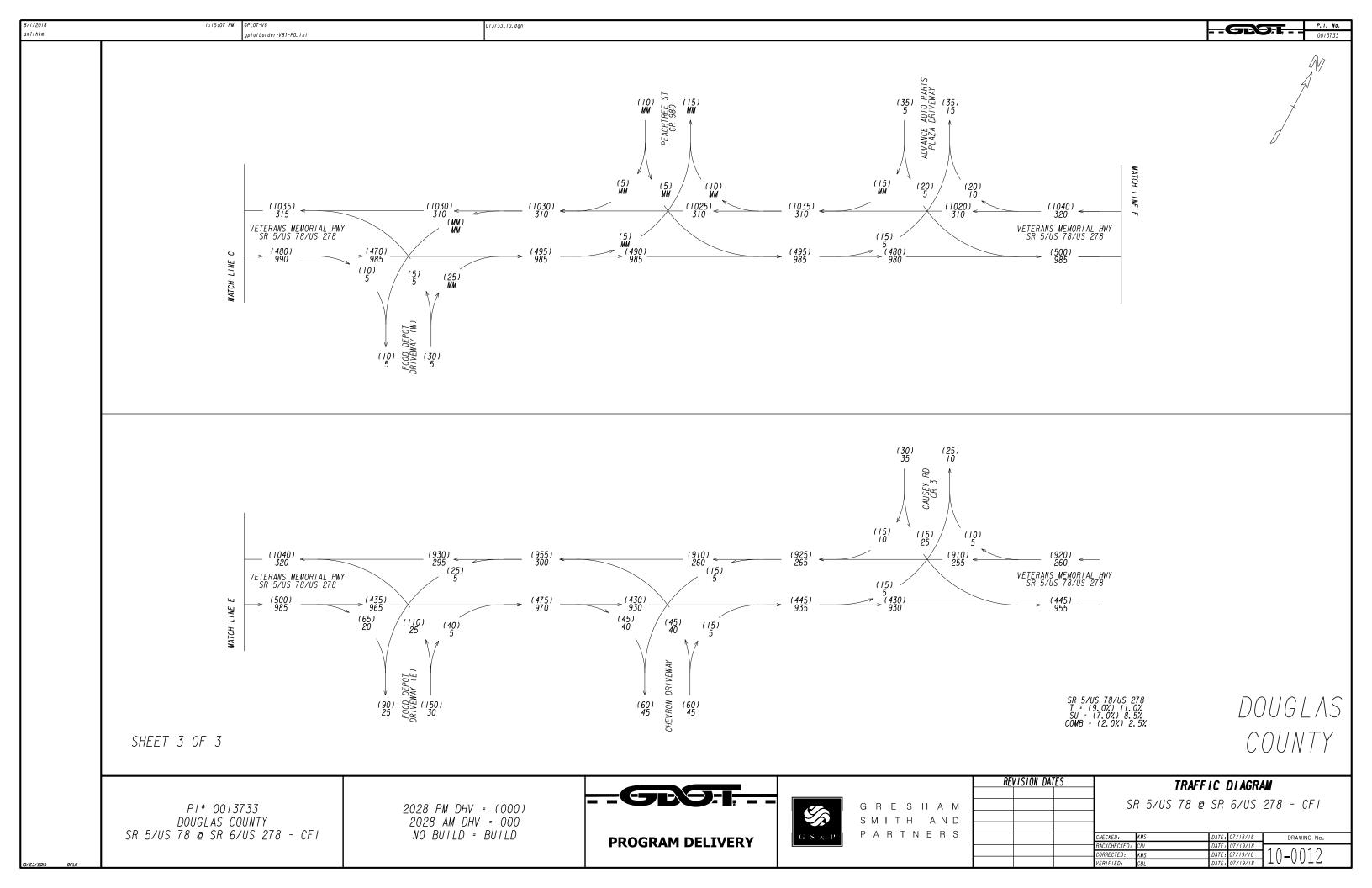


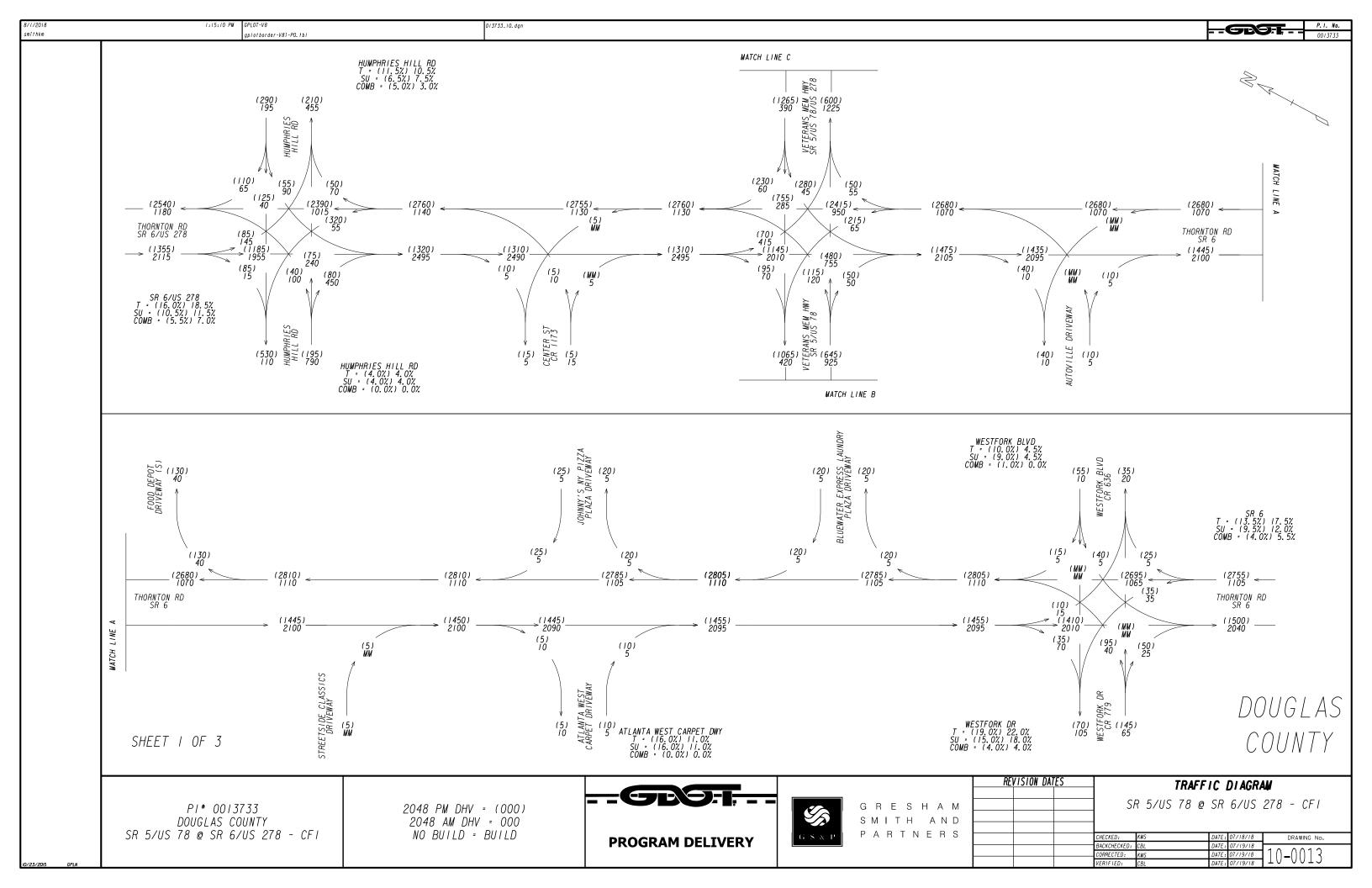


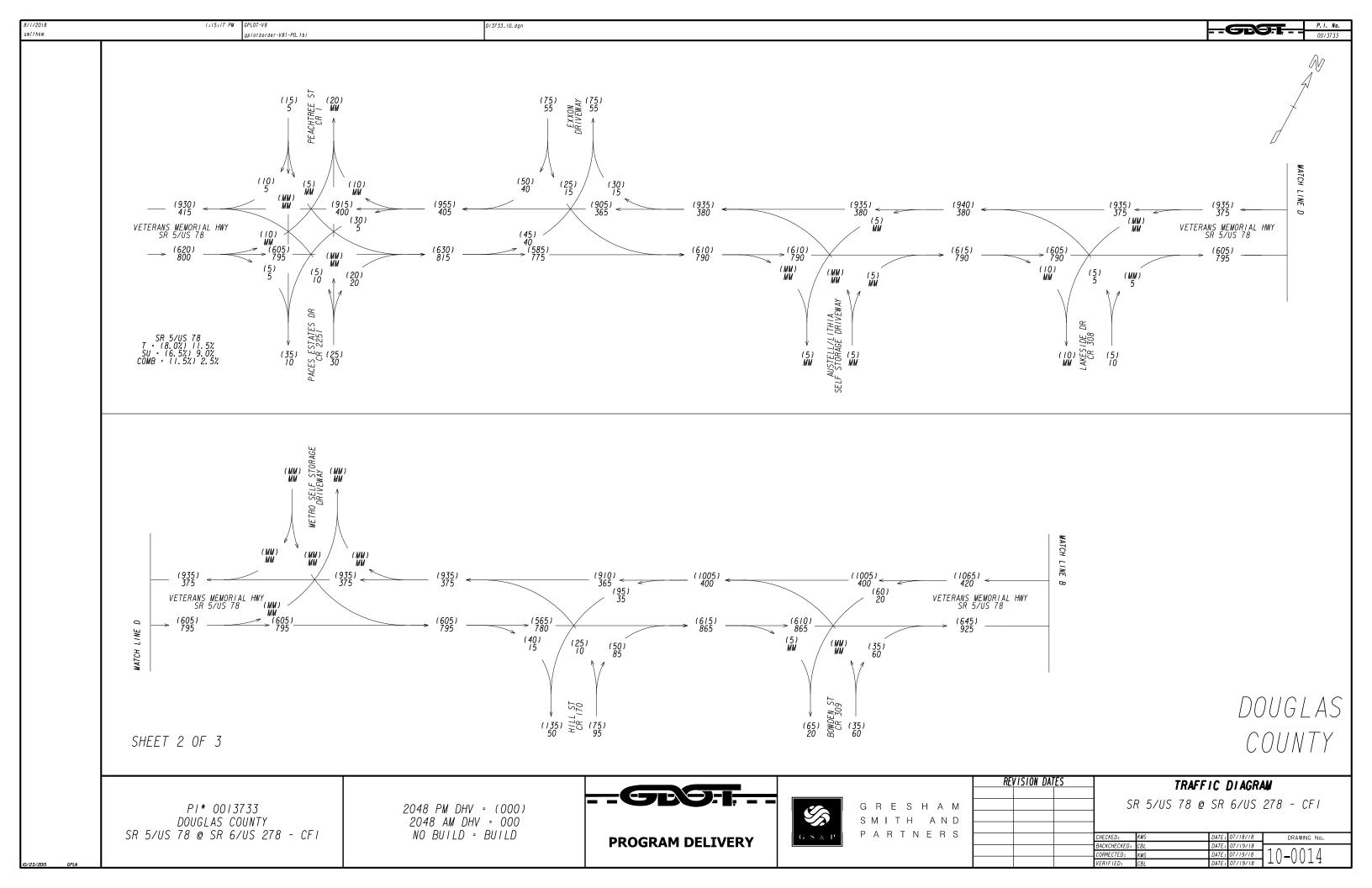


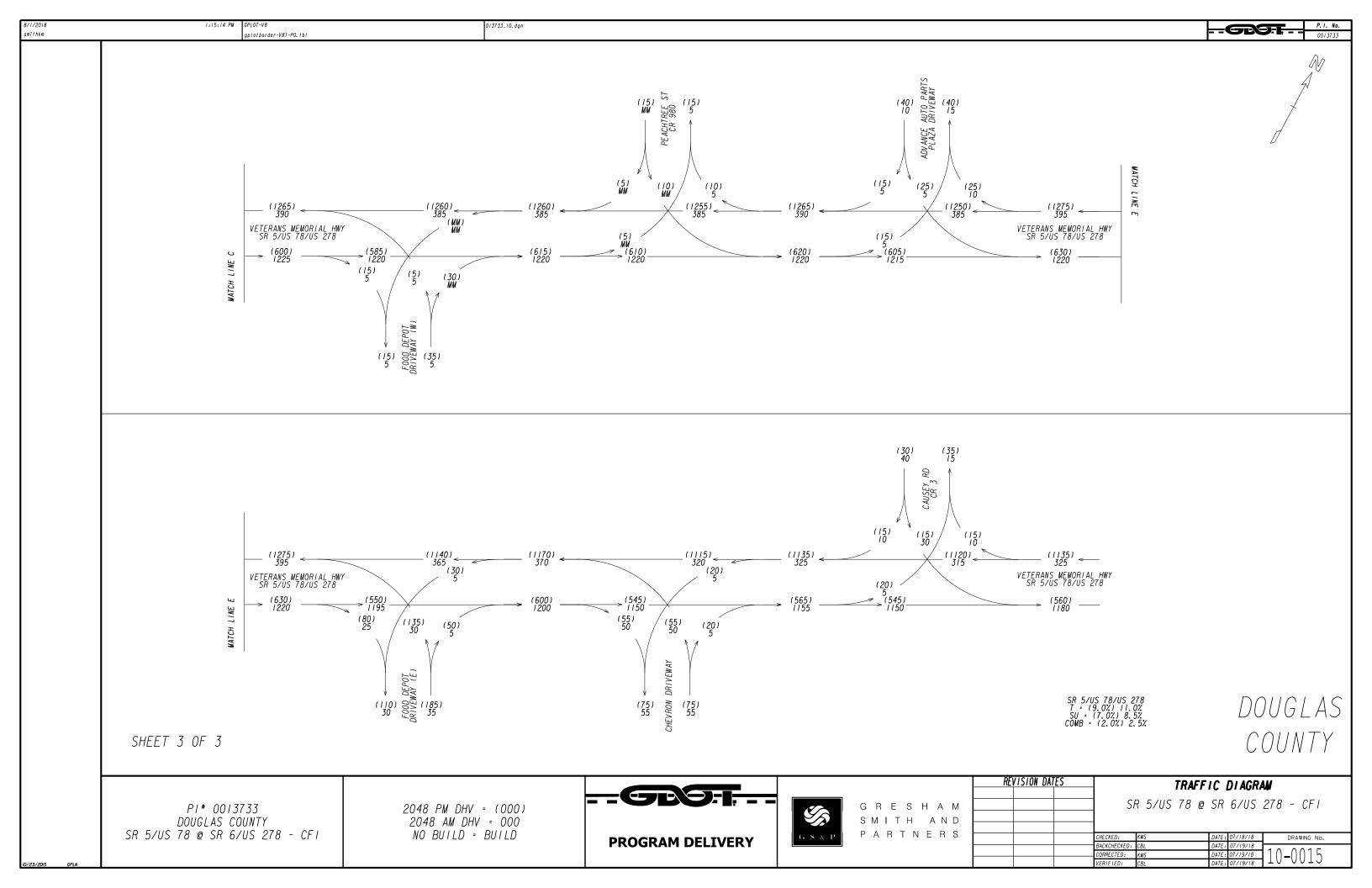


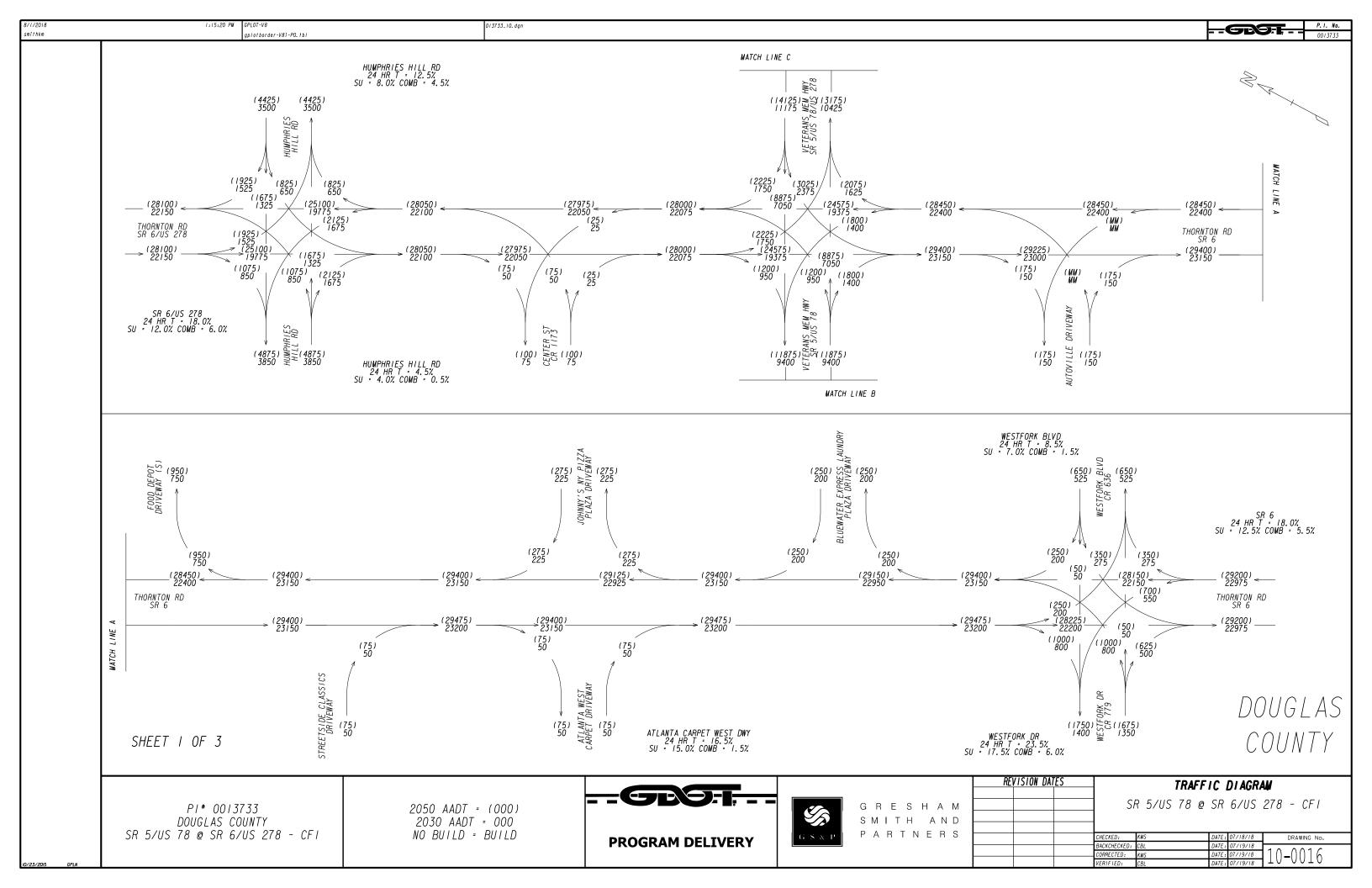


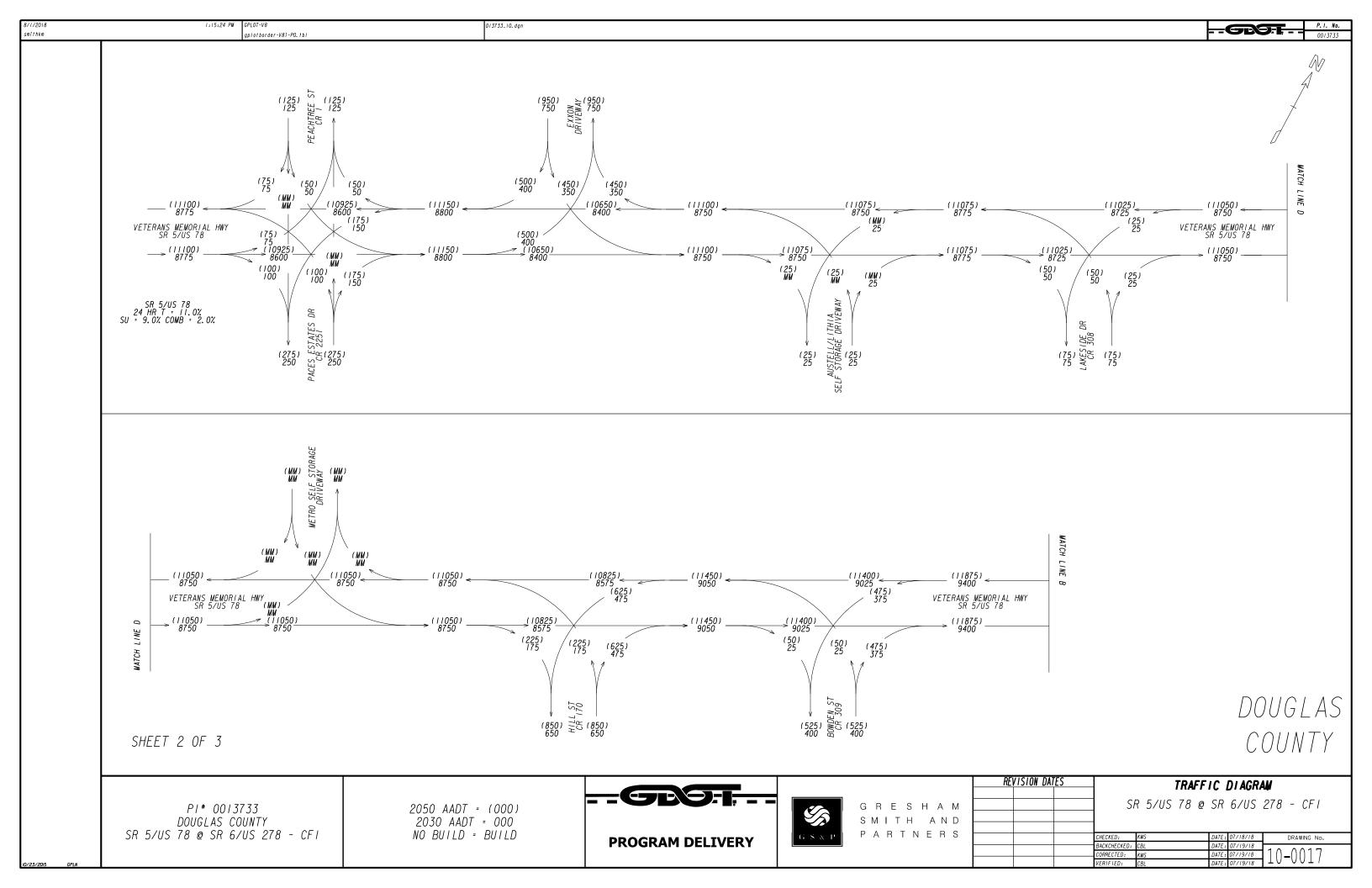


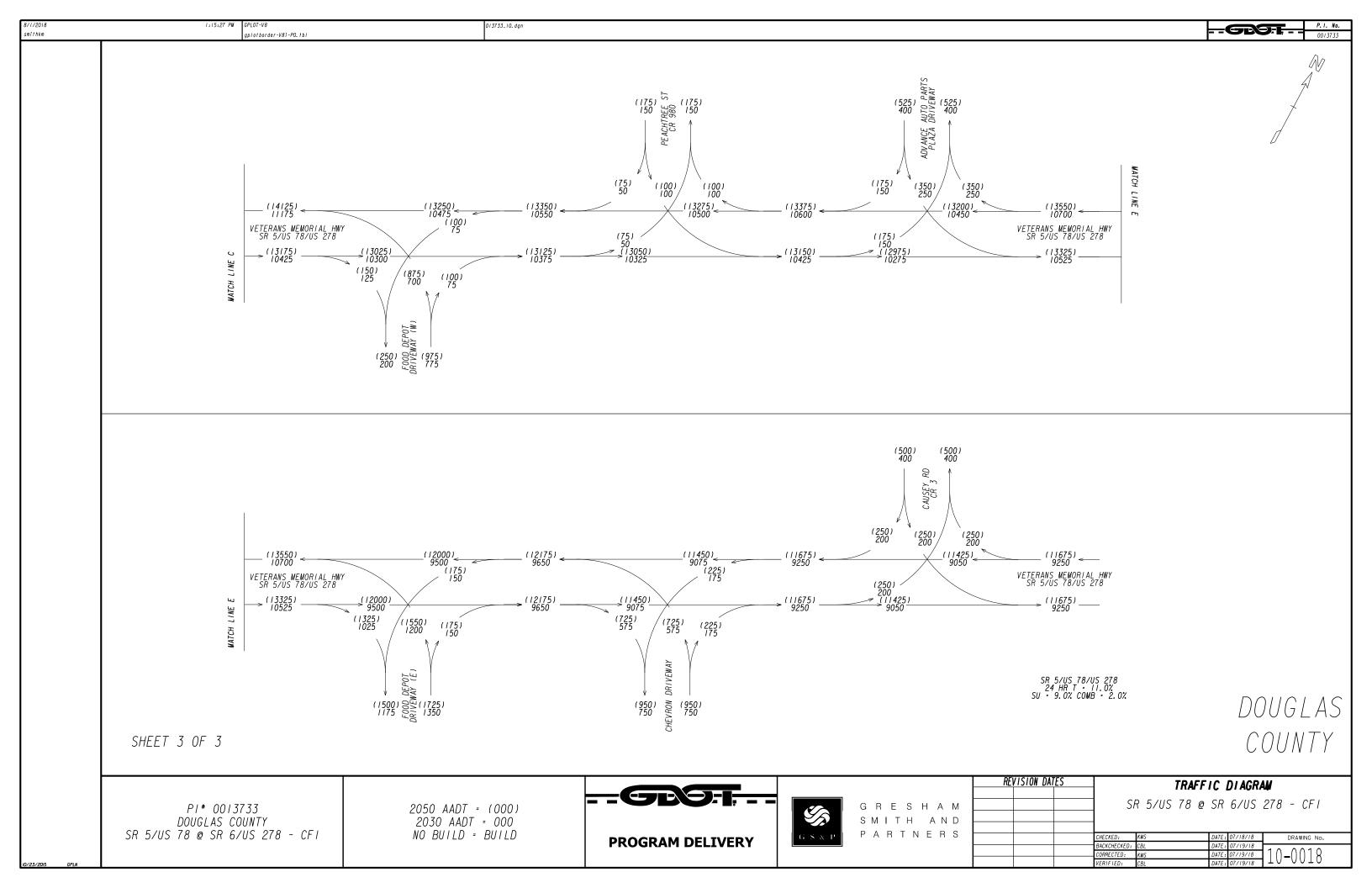


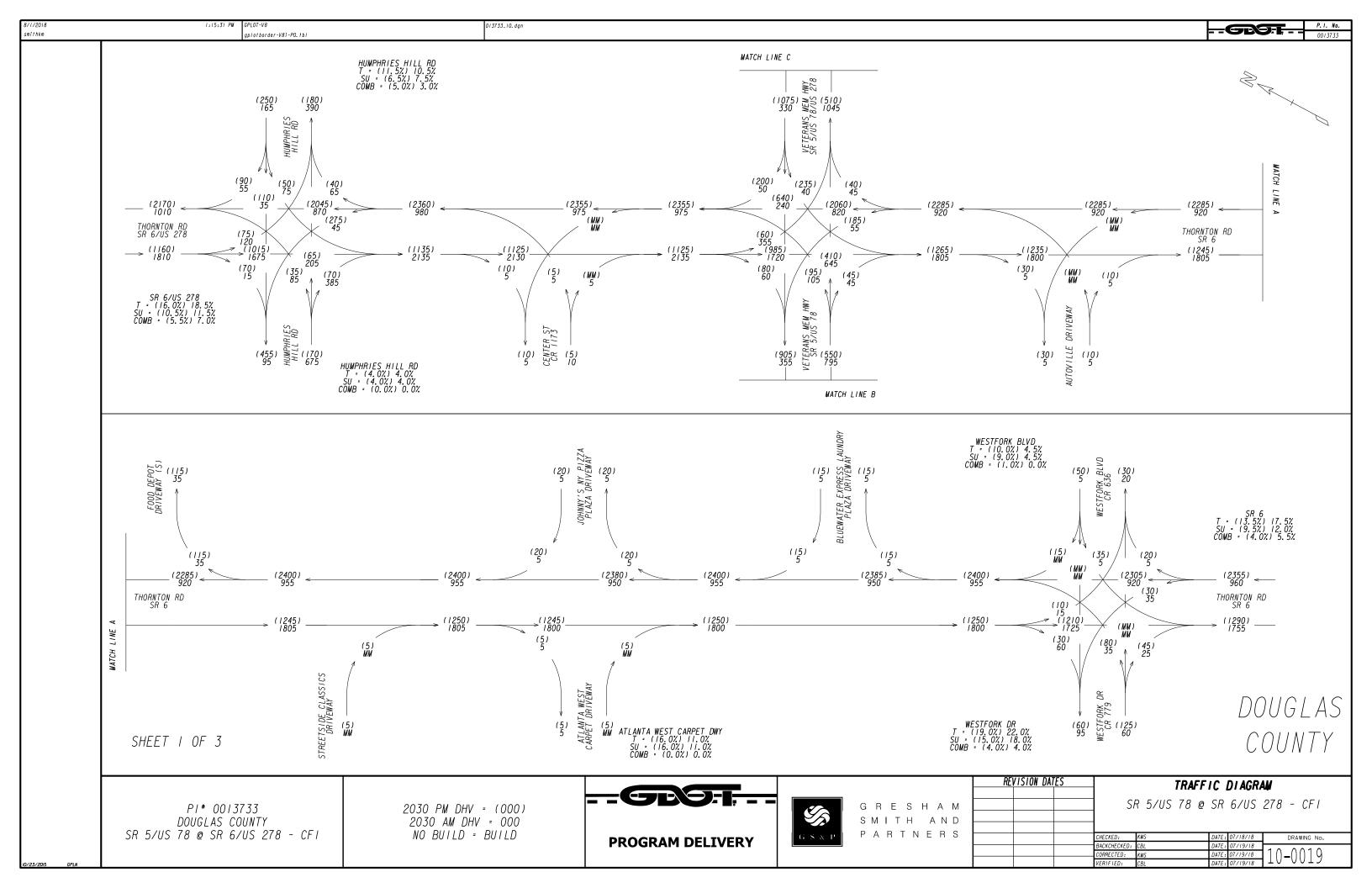


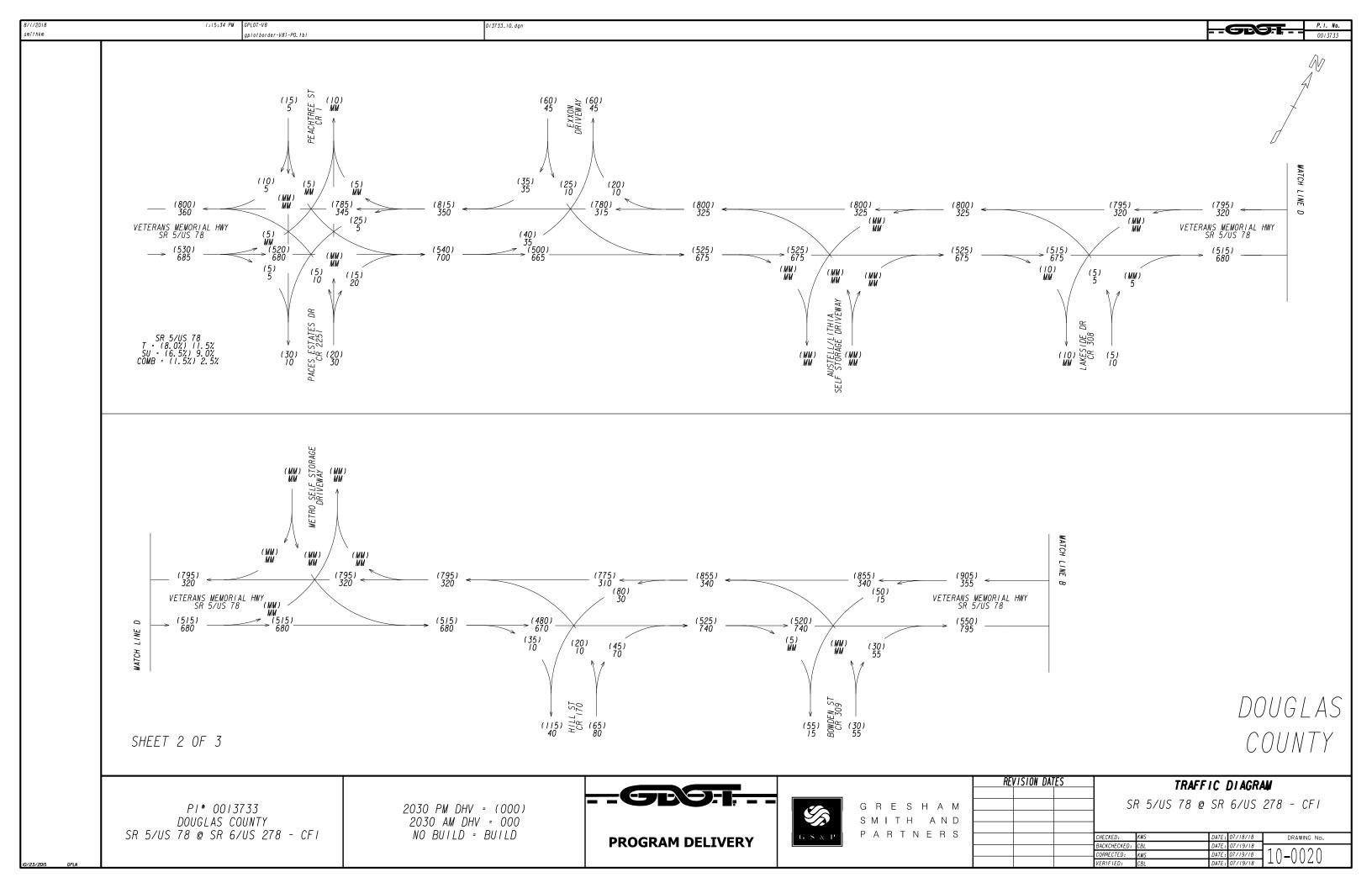


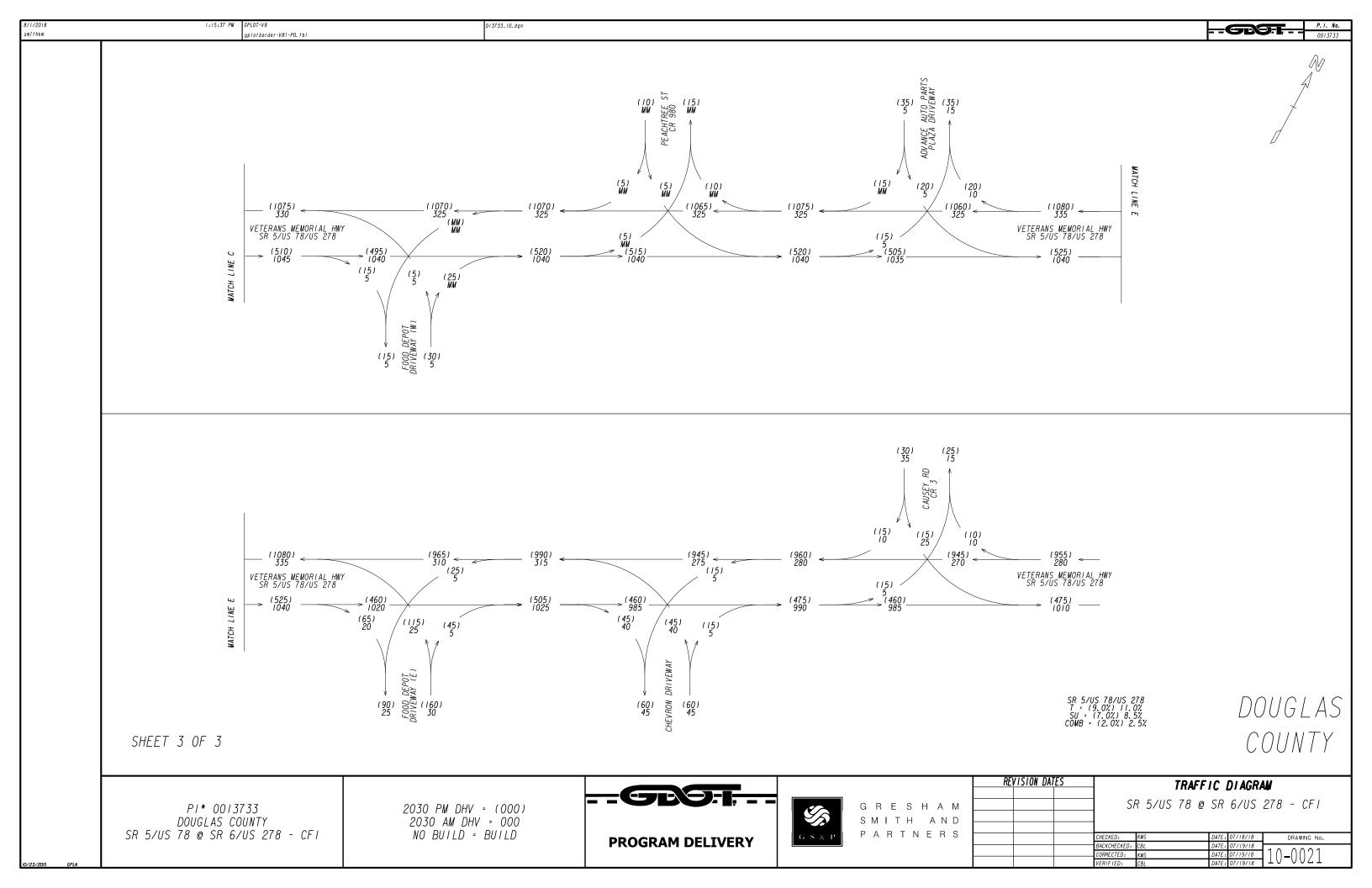


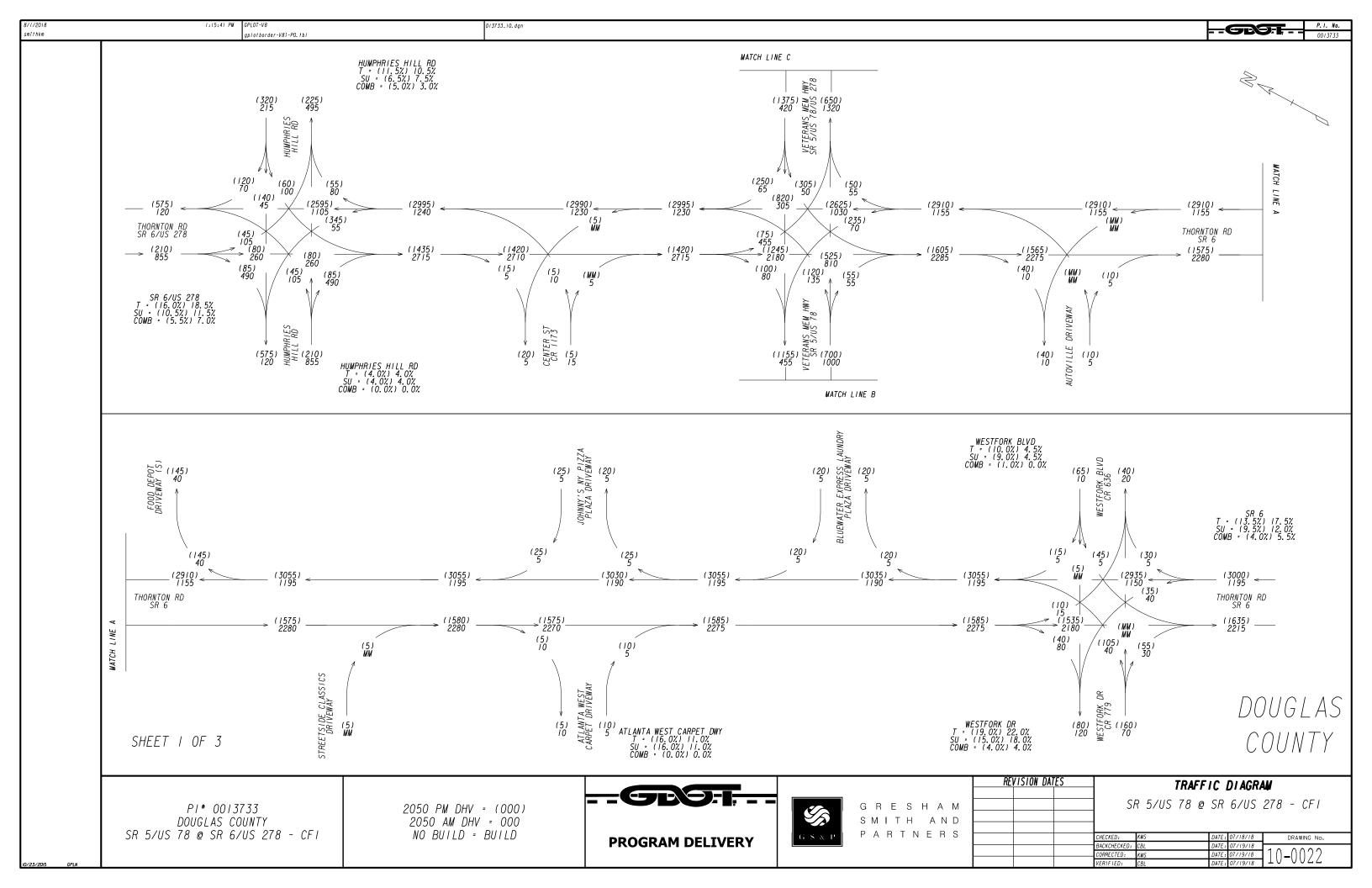


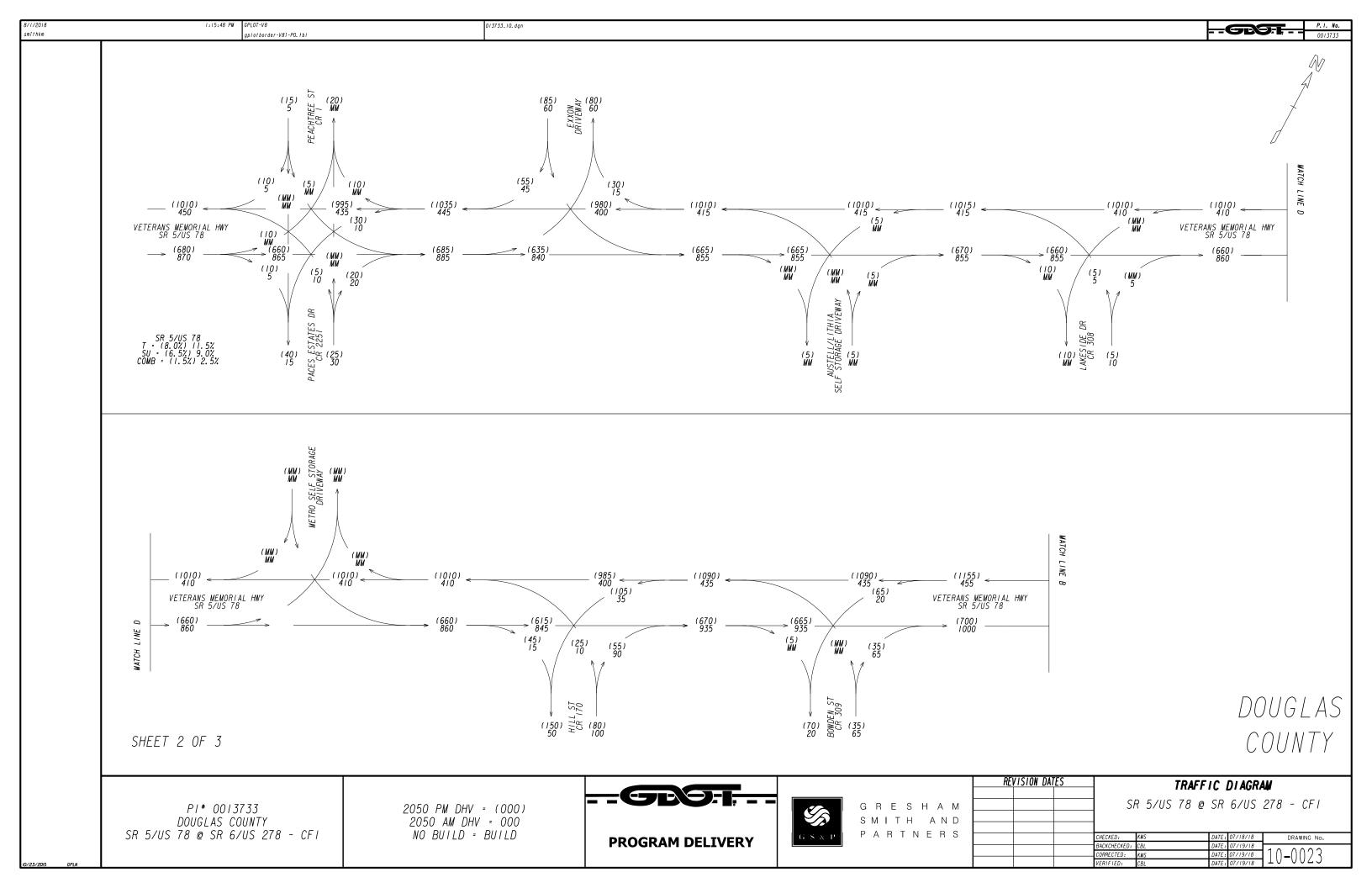


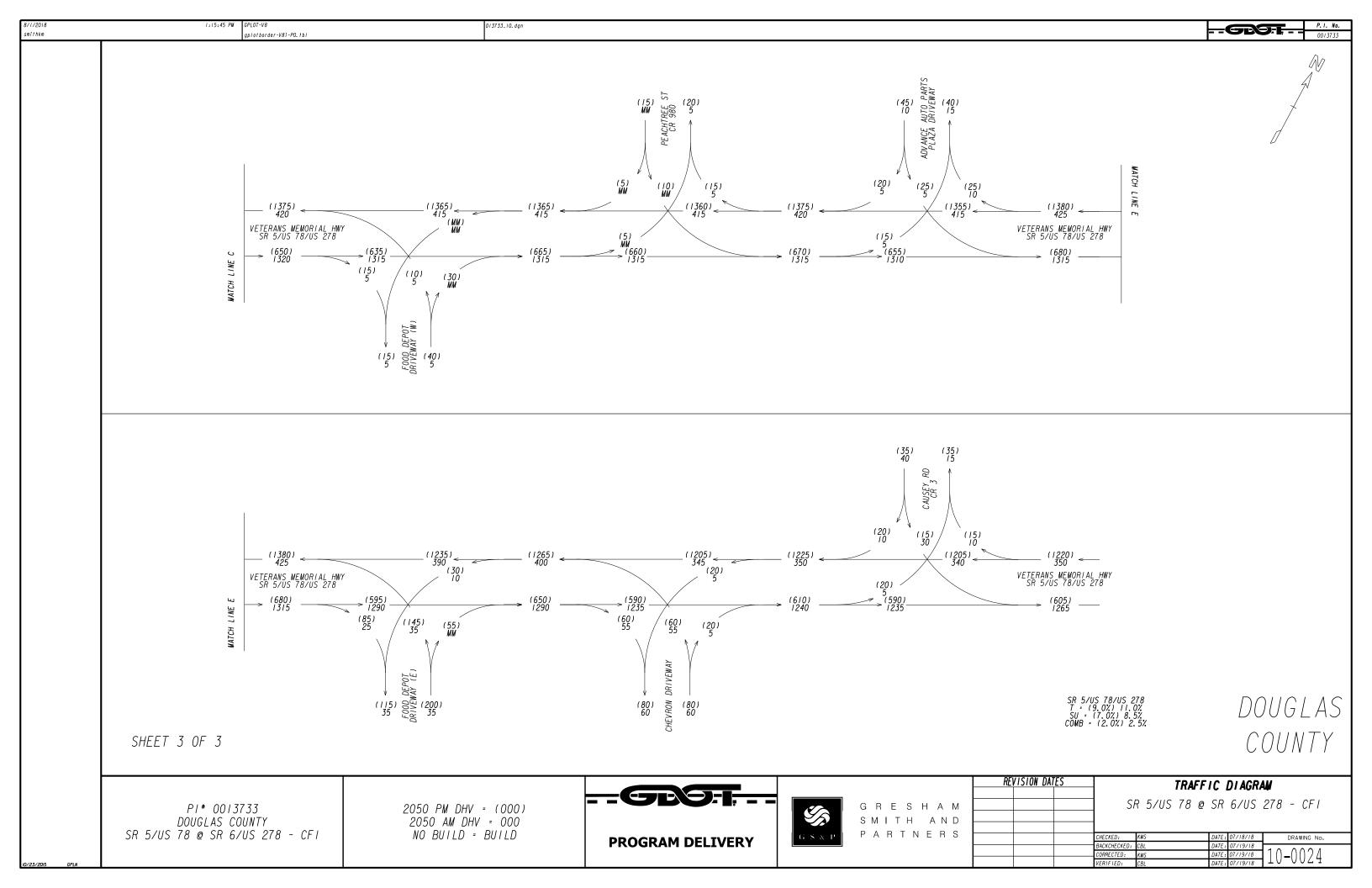












7. CAPACITY ANALYSIS SUMMARY

				20	18			2028 N	Io-Build			2028	Build		2048 No-Build			2048 Build				
Alternative	Intersection	Existing Control Type	А	M	P	M	Α	m	F	M	А	M	Р	Μ	А	M	Р	PM	Α	М	Р	M
			LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	Los	Delay	LOS	Delay	LOS	Delay	LOS	Delay
1	Thorton Road/SR 6 @ SR5/US 78	S	D	44.1	F	232.7	F	60.6	F	305.7	N/A	N/A	N/A	N/A	F	203.8	F	510.2	N/A	N/A	N/A	N/A
1	Thorton Road/SR 6 @ Westfork Blvd/Westfork Dr	S	В	11.5	В	14.5	В	12.7	В	15.5	N/A	N/A	N/A	N/A	В	14.2	В	17.2	N/A	N/A	N/A	N/A
2	Thorton Road/SR 6 @ SR5/US 78	S	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Е	60.7	F	258.7	N/A	N/A	N/A	N/A	F	161.2	F	420.9
2	Thorton Road/SR 6 @ Westfork Blvd/Westfork Dr	S	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	В	11.1	В	15.6	N/A	N/A	N/A	N/A	В	14.3	В	17.1
3	Thorton Road/SR 6 @ SR5/US 78	S	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	С	29.94	С	24.97	N/A	N/A	N/A	N/A	С	28.84	С	32.81
4	Thorton Road/SR 6 @ SR5/US 78	S	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	С	25.9	D	52.0	N/A	N/A	N/A	N/A	D	45.0	F	95.8
4	Quadrant @ SR 5 TWSC	None	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	F	57.9	Α	4.1	N/A	N/A	N/A	N/A	F	119.4	Α	9.7
4	Quadrant @ SR 6 TWSC	None	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	F	132.6	F	638.4	N/A	N/A	N/A	N/A	F	125.2	F	648.1
5	Thorton Road/SR 6 @ SR5/US 78	S	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	С	23.9	С	20.7	N/A	N/A	N/A	N/A	D	42.2	С	29.4
5	Quadrant @ SR 5 Signalized	None	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Α	9.2	Α	5.6	N/A	N/A	N/A	N/A	В	16	В	10.1
5	Quadrant @ SR 6 Signalized	None	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Α	7.4	В	11	N/A	N/A	N/A	N/A	С	33.9	В	17.4
6	Thorton Road/SR 6 @ SR5/US 78	S	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	В	16.8	С	20.7	N/A	N/A	N/A	N/A	С	29.4	С	23.7
6	Quadrant @ SR 5 Signalized & Fixed NB Thru	None	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Α	9.1	Α	5.5	N/A	N/A	N/A	N/A	В	18.3	Α	9.1
6	Quadrant @ SR 6 Signalized & Fixed NB Thru	None	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Α	9.8	В	11.1	N/A	N/A	N/A	N/A	С	31.8	С	25.9

Signalized Intersection

Unsignalized Intersection

No Build

Duel Left

Quadrant Option 1

Quadrant Option 2

Quadrant Option

Note: Alternative 6 on this page corresponds to the preferred alternative in the Alternatives Discussion section in the main body of this concept report.

D. Pass 10/6/2020

8. TE STUDY/TRAFFIC WARRANT ANALYSI	IS

Hardman, Lilian

From: Hatch, Justin A

Sent: Friday, May 22, 2020 5:09 PM

To: Boockholdt, Steven C

Cc: Bryant, Genine I; Hardman, Lilian

Subject: RE: PI 0013733 Douglas County Signal Warrant Study

Attachments: Quadrant Volume Shuffle - AADT.xlsx; 0013733 Quadrant Layout 101619.pdf; 0013733_

10.pdf

Steven & Lily,

I have completed the signal warrant analysis. In short, I agree that both new signals meet warrants required for permitting. The existing and projected volumes for both signals meet Warrant 1-B (8 Hour Interruption of Continuous Traffic) when the 70% threshold is applied for the high speed roadway. One of the intersections even meets 100% volumes. More details are shown in the attached document which is just some minor tweaks to what you provided.

I will note that I ended up re-arranging the volumes a bit. You may want to fact check me on some of these calls:

- The analysis is now very conservative. I assumed dual left turn lane for a 2-lane/2-lane warrant. All RTs were removed. It still required applying 70%, but that should be acceptable.
- I swapped the road names on the diagram so that SR 5/Veteran's runs north/south and SR 6/Thornton runs east/west.
- In my judgement, all SB vehicles making a RT today will actually make a RT at each quadrant. I adjusted the volumes accordingly, but it really doesn't affect warrants at the end of the day.
- I made some other minor tweaks to the volumes. It may be worth setting up a call to double check, but maybe you can look at my work and let me know if you disagree.

Is a short and simple formal write up on this warrant analysis going to be necessary for completion of the concept report? I can tell you this is enough for me to support the concept and Traffic Ops will only need the formal write up when we get to permitting. But if you need it now, we will write it up ASAP.

I hope this helps, please let me know if you need anything else.

Have a great long weekend!

Justin Hatch, P.E. District Traffic Engineer



District 7, Metro Atlanta 5025 New Peachtree Rd Chamblee, GA, 30341 404.858.0459 cell

From: Hatch, Justin A

Sent: Friday, May 22, 2020 11:52 AM

To: Boockholdt, Steven C <SBoockholdt@dot.ga.gov>

Cc: Bryant, Genine I <GBryant@dot.ga.gov>; Hardman, Lilian <lhardman@dot.ga.gov>

Subject: RE: PI 0013733 Douglas County Signal Warrant Study

Steven & Lily,

My apologies on not providing quicker response on this request.

I looked at the spreadsheet that Lily sent in October and the redistribution of trips looks good to me and obviously it shows that we meet the peak hour warrant. I really like how this excel sheet has been setup by the way.

There's two main recommendations I would make to ensure that these signals have no problem in regards to approved permits. First, the GDOT signal warrant process strongly prefers to meet the 8-hour warrant. Second, it's best to show the warrants based on 100% volumes; even if the volume reduction is allowed/recommended by the MUTCD, the GDOT signal warrant process likes to be as conservative as possible.

I should be able to use what has already been provided and more sheets showing a method for evaluation of warrant 1. I'll try to get it back to you today or first thing on Tuesday to ensure this isn't what is holding anything up.

Feel free to call if you'd like to discuss anything further.

Justin Hatch, P.E.

District Traffic Engineer



District 7, Metro Atlanta 5025 New Peachtree Rd Chamblee, GA, 30341 404.858.0459 cell

From: Boockholdt, Steven C < SBoockholdt@dot.ga.gov >

Sent: Tuesday, November 5, 2019 2:49 PM **To:** Hatch, Justin A < <u>juhatch@dot.ga.gov</u>>

Cc: Bryant, Genine I <GBryant@dot.ga.gov>; Hardman, Lilian <lhardman@dot.ga.gov>

Subject: RE: PI 0013733 Douglas County Signal Warrant Study

Justin,

Just wanted to follow up to our request below. Please also note the PM has changed for this project.

Steven Boockholdt, P.E.

Civil Engineer Group Manager



Office of Roadway Design 600 West Peachtree St. N.W. Atlanta, Georgia 30308

404.631.1770 office SBoockholdt@dot.ga.gov email

From: Hardman, Lilian < lhardman@dot.ga.gov Sent: Thursday, October 17, 2019 2:07 PM
To: Hatch, Justin A < juhatch@dot.ga.gov>

Cc: Boockholdt, Steven C < SBoockholdt@dot.ga.gov >; Smith-Calloway, Andrea L < ASmith-Calloway@dot.ga.gov >

Subject: FW: PI 0013733 Douglas County Signal Warrant Study

Good Afternoon Justin,

I am contacting you in order to request a signal warrant study for PI 0013733 Douglas County. The purpose of this project is to improve operations at the intersection of State Route (SR) 5/US 78 and SR 6/US 278. SR 6 is an urban principal arterial and is 4 lanes while SR 5 is an urban minor arterial with 4 lanes. This intersection of SR 5 and SR 6 has been identified for improvements through GDOT Planning's 2015 SR 6 Access Management Plan. The study details the need for safety and operational improvements to reduce turning conflicts and improve traffic flow near I-20. The project was originally proposed to be a Displaced Left Turn (formerly known as a Continuous Flow Intersection) however based on the ICE analysis it was found that a Quadrant Intersection is the preferred alternative.

A capacity analysis was performed in Synchro and it was found that the two new intersections created with the quadrant roadway at both SR 5 and SR 6 will be required to be signalized as stop control conditions fails considerably. A signal warrant assessment was also performed and it was found that both intersections meet the criteria for Warrant 4C-4 – Peak Hour 70% Factor, details of which are attached in the file Quadrant Volume Shuffle.

A concept layout of the project as well as existing and projected traffic volumes of the intersection have been attached for your reference as well. Please don't hesitate to reach out to me if there is anything you need.

Thank You!

Lily Hardman, P.E. Civil Engineer 4

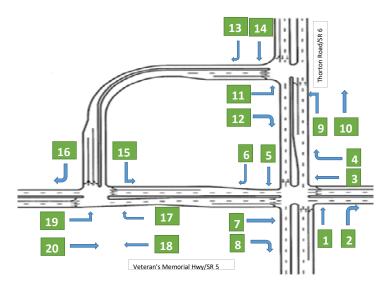


Office of Roadway Design 27th Floor 600 West Peachtree St. NW Atlanta, GA, 30308 404.631.1676 office lhardman@dot.ga.gov email

Hands-free cell phone use is the law when driving in Georgia. When drivers use cell phones and other electronic devices it must be with hands-free technology. There are many facets to the law. For details, visit https://www.gahighwaysafety.org/highway-safety/hands-free-law/

2028 AM Volumes

Г	1				Signalia	zed Interse	ction: SR	6 @ SR 5						
ng	EB Left	EB Thru	EB Right	WB Left	WB Thru	WB Right	NB Left	NB Thru	NB Right	SB Left	SB Thru	SB Right		
Exsiting	340	1650	55	55	785	45	100	605	45	40	225	50		
						ed Interse								
	EB Left	EB Thru	EB Right	WB Left	WB Thru	WB Right	NB Left	NB Thru	NB Right	SB Left	SB Thru	SB Right		
	-	1650	55	-	840	45	1	705	45	-	225	50		
ō						ntersection							Assumption	ons:
Proposed	EB Left	EB Thru	EB Right	WB Left	WB Thru	WB Right	NB Left	NB Thru	NB Right	SB Left	SB Thru	SB Right	Westbound le	
Prop	340	-	-	55	-		-	-	-	-	-	-	counted as movemen	
					•	ntersection	_	-						
	EB Left	EB Thru	EB Right	WB Left	WB Thru	WB Right	NB Left	NB Thru	NB Right	SB Left	SB Thru	SB Right		
	340	-	-		-		100	605		40	275	-		
	Mvmt	Volume			Mvmt	Volume		Mvmt	Volume			Mvmt	Volume	
	1	705			7	1650		13	40			19	340	
	2	45			8	55		14	275			20	1705	
	3	840			9	100		15	40					
	4	45		,	10	605		16	100					
	5	225			11	340		17	55					
	6	50			12	55		18	785					



WARRANT 4C-4: PEAK HOUR (70% FACTOR - Speed Limit = 45 mph)

Thorton Road (SR 6) at Quadrant Roadway

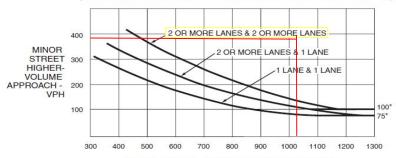
Major Street - Total of Both Approaches - Vehicles Per Hour: SR 6

1020 vph

Minor Street Higher Volume Approach - Vehicles Per Hour: Quadrant Roadway

395 vph

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



MAJOR STREET—TOTAL OF BOTH APPROACHES— VEHICLES PER HOUR (VPH)

*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

WARRANT 4C-4: PEAK HOUR (70% FACTOR - Speed Limit = 45 mph)

Veteran's Memorial (SR 5) at Quadrant Roadway

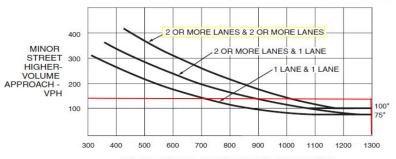
Major Street - Total of Both Approaches - Vehicles Per Hour: SR 5

2885 vph

Minor Street Higher Volume Approach - Vehicles Per Hour: Quadrant Roadway

140 vph

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



MAJOR STREET—TOTAL OF BOTH APPROACHES— VEHICLES PER HOUR (VPH)

*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

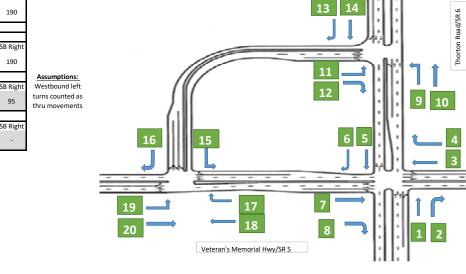
П					Signalize	d Intersecti	on: SR 6 @	SR 5				
ing	EB Left	EB Thru	EB Right	WB Left	WB Thru	WB Right	NB Left	NB Thru	NB Right	SB Left	SB Thru	SB Right
Exsiting	55	940	75	175	1970	40	95	385	45	225	620	190
	Since High Language Control											
	Signalized Intersection: SR 6 @ SR 5											
	EB Left	EB Thru	EB Right	WB Left	WB Thru	WB Right	NB Left	NB Thru	NB Right	SB Left	SB Thru	SB Right
	-	940	75	-	2145	40	-	480	45	-	620	190
g				S	ignalzed Int	ersection: S	R 6 @ Qua	drant Rd				
950	EB Left	EB Thru	EB Right	B Left (Actually F	WB Thru	WB Right	NB Left	NB Thru	NB Right	SB Left	SB Thru	SB Right
Proposed	55	•	-	175	1970	-	-	-	-	225	•	95
				Si	ignalized Int	ersection: S	SR 5 @ Qua	drant Rd				
	EB Left	EB Thru	EB Right	WB Left	WB Thru	WB Right	NB Left	NB Thru	NB Right	SB Right	SB Thru	SB Right
	55	-	175	-	-	-	95	385	-	225	810	-

020	D 8 4	1/-1	

Mvmt	Volumes	Mvmt	Volumes
1	480	7	940
2	45	8	75
3	2145	9	95
4	40	10	385
5	620	11	55
6	190	12	175

olumes								
Volumes								
225								
810								
225								
95								
175								
1970								

Mvmt Volumes



WARRANT 4C-4: PEAK HOUR (70% FACTOR - Speed Limit = 45 mph)

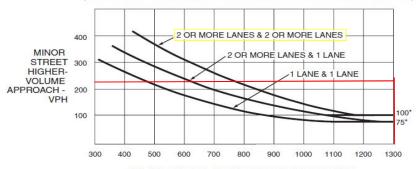
Thorton Road (SR 6) at Quadrant Roadway

Major Street - Total of Both Approaches - Vehicles Per Hour: SR 6

1515 vph

Minor Street Higher Volume Approach - Vehicles Per Hour: Quadrant Rd

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



MAJOR STREET—TOTAL OF BOTH APPROACHES— VEHICLES PER HOUR (VPH)

*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

WARRANT 4C-4: PEAK HOUR (70% FACTOR - Speed Limit = 45 mph)

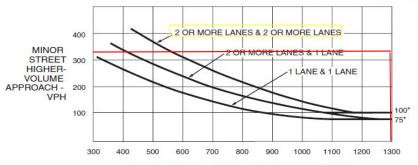
Veteran's Memorial (SR 5) at Quadrant Roadway

Major Street - Total of Both Approaches - Vehicles Per Hour: SR 5

3215 vph

Minor Street Higher Volume Approach - Vehicles Per Hour: Quadrant Rd

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET))



MAJOR STREET—TOTAL OF BOTH APPROACHES— VEHICLES PER HOUR (VPH)

*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

				:	Signalized	Intersectio	n: SR 6 @	SR 5				
ing	EB Left	EB Thru	EB Right	WB Left	WB Thru	WB Right	NB Left	NB Thru	NB Right	SB Left	SB Thru	SB Right
Exsiting	415	2010	70	65	950	55	120	755	50	45	285	60
	Signalized Intersection: SR 6 @ SR 5											
	EB Left	EB Thru	EB Right	WB Left	WB Thru	WB Right	NB Left	NB Thru	NB Right	SB Left	SB Thru	SB Right
	-	2010	70	-	1015	55	1	875	50	-	285	60
g				Sign	alzed Inte	rsection: SR	l 6 @ Qua	drant Rd				
900	EB Left	EB Thru	EB Right	B Left (Actually I	WB Thru	WB Right	NB Left	NB Thru	NB Right	SB Left	SB Thru	SB Right
Proposed	415	1	-	65	950	-	1	-	,	45	-	120
				Signa	alized Inte	rsection: SF	₹ 5 @ Qua	drant Rd				
	EB Left	EB Thru	EB Right	WB Left	WB Thru	WB Right	NB Left	NB Thru	NB Right	SB Right	SB Thru	SB Right
	415	-	65	-	-	-	120	755	-	45	345	-

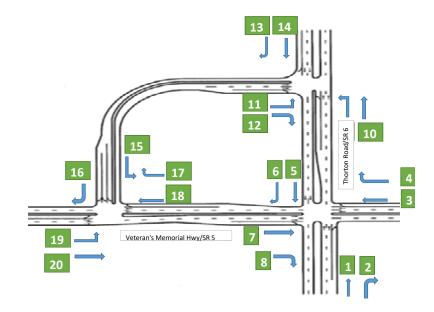
Assumptions:								
Westbound left								
turns counted as								
thru movements								

2028 PM Volumes

Mvmt	Volume					
1	875					
2	50					
3	1015					
4	55					
5	285					
6	60					

	umes		
Mvmt	Volume	Mvmt	Volume
7	2010	13	45
8	70	14	345
9	120	15	45
10	755	16	120
11	415	17	65
12	65	18	950





WARRANT 4C-4: PEAK HOUR (70% FACTOR - Speed Limit = 45 mph)

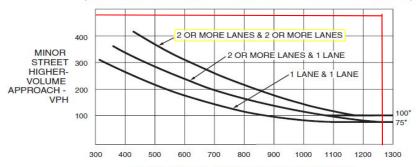
Thorton Road (SR 6) at Quadrant Roadway

Major Street - Total of Both Approaches - Vehicles Per Hour: SR 6

1265 vph

Minor Street Higher Volume Approach - Vehicles Per Hour: Quadrant Roadway

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



MAJOR STREET—TOTAL OF BOTH APPROACHES— VEHICLES PER HOUR (VPH)

*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

WARRANT 4C-4: PEAK HOUR (70% FACTOR - Speed Limit = 45 mph)

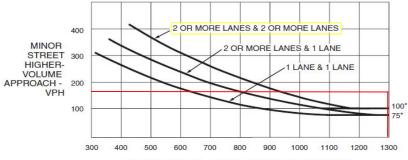
Veteran's Memorial (SR 5) at Quadrant Roadway

Major Street - Total of Both Approaches - Vehicles Per Hour: SR 5 3510 vph

Minor Street Higher Volume Approach - Vehicles Per Hour: Quadrant Roadway

165 vph

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



MAJOR STREET—TOTAL OF BOTH APPROACHES— VEHICLES PER HOUR (VPH)

*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

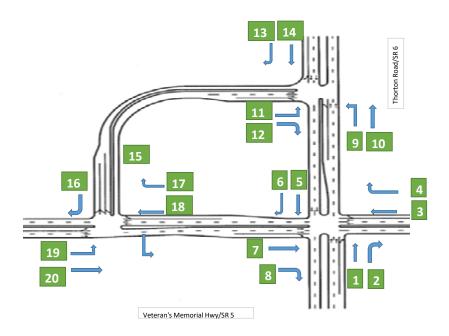
					Signalia	zed Interse	ction: SR	6 @ SR 5					
gu	EB Left	EB Thru	EB Right	WB Left	WB Thru	WB Right	NB Left	NB Thru	NB Right	SB Left	SB Thru	SB Right	
Exsiting	70	1145	95	215	2415	50	115	480	50	280	755	230	
	Signalized Intersection: SR 6 @ SR 5												
	EB Left	EB Thru	EB Right	WB Left	WB Thru	WB Right	NB Left	NB Thru	NB Right	SB Left	SB Thru	SB Right	
	-	1145	95	-	2630	50	-	595	50	-	755	230	
70	Signalzed Intersection: SR 6 @ Quadrant Rd												
ose	EB Left	EB Thru	EB Right	VB Left (R1	WB Thru	WB Right	NB Left	NB Thru	NB Right	SB Left	SB Thru	SB Right	
Proposed	70	,	-	215	2415	•	-	-	,	280	,	115	
				9	ignalized I	ntersection	ı: SR 5 @	Quadrant F	₹d				
	EB Left	EB Thru	EB Right	WB Left	WB Thru	WB Right	NB Left	NB Thru	NB Right	SB Right	SB Thru	SB Right	
	70	-	215	-	-	-	115	480	-	280	985	-	

Assumptions: Westbound left turns counted as thru movements

2028 PM	Volume
	Mvmt

Mvmt	Volumes	Mvmt	Volumes
1	595	7	1145
2	50	8	95
3	2630	9	115
4	50	10	480
5	755	11	70
6	230	12	215

lumes		_		
1vmt	Volumes		Mvmt	Volumes
.3	280		19	70
.4	985		20	1240
.5	280			
.6	115			
.7	215			
.8	2415			



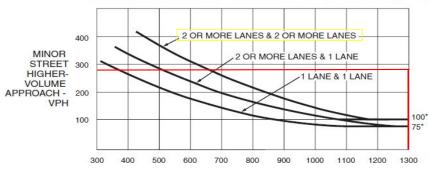
WARRANT 4C-4: PEAK HOUR (70% FACTOR - Speed Limit = 45 mph)

Thorton Road (SR 6) at Quadrant Roadway

Major Street - Total of Both Approaches - Vehicles Per Hour: SR 6 1860 vph

Minor Street Higher Volume Approach - Vehicles Per Hour: Quadrant Roadway

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



MAJOR STREET—TOTAL OF BOTH APPROACHES— VEHICLES PER HOUR (VPH)

*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

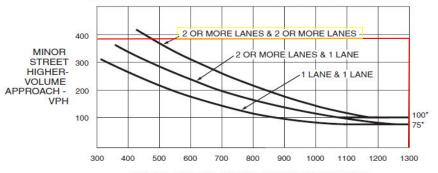
WARRANT 4C-4: PEAK HOUR (70% FACTOR - Speed Limit = 45 mph)

Veteran's Memorial (SR 5) at Quadrant Roadway

Major Street - Total of Both Approaches - Vehicles Per Hour: SR 5 3940 vph

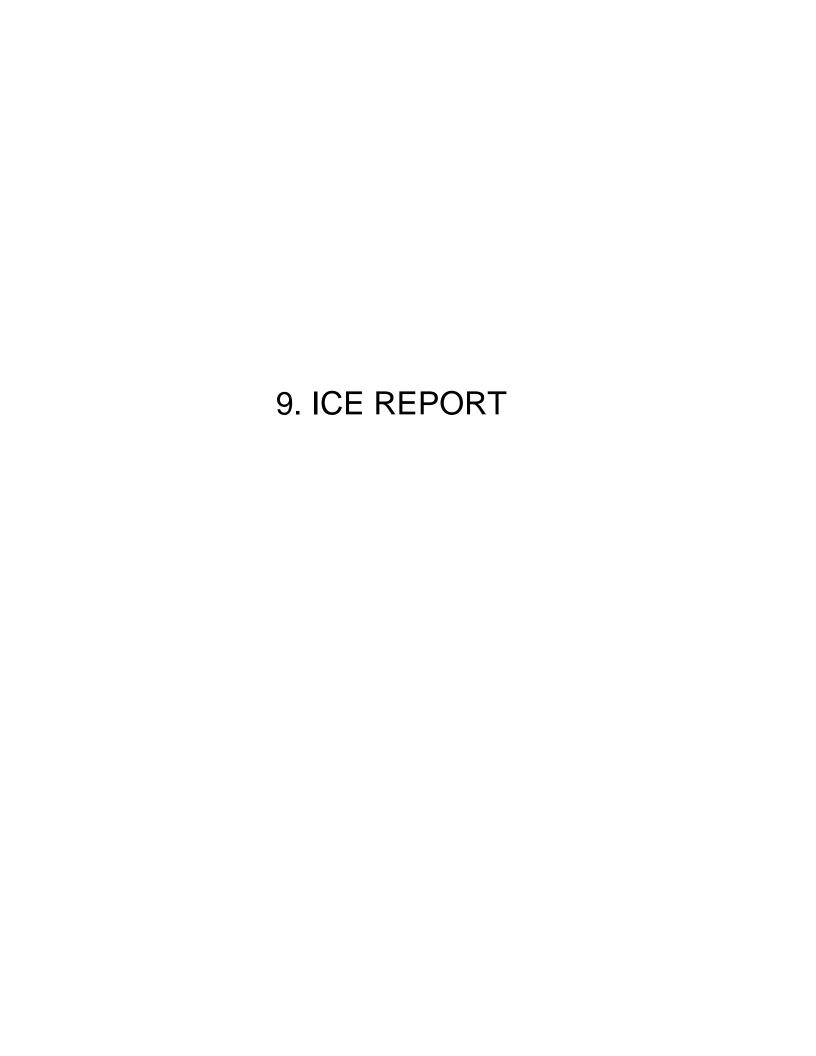
Minor Street Higher Volume Approach - Vehicles Per Hour: Quadrant Roadway 395 vph

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



MAJOR STREET—TOTAL OF BOTH APPROACHES— VEHICLES PER HOUR (VPH)

*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.



GDOT INTERSECTION CONTROL EVALUATION (ICE) TOO!

ICE Version 2.15 Revised 07/01/2019

							•					LEN	seu 0//01/	2019
Georgia Department of Transportation		,												
GDOT PI # (or N/A): 0013733	Request By: Roadway Design	201	8 Existin	g Data Y	ear/	2018		ng Yea		ımes		N		
County: Douglas	GDOT District: 7 - Metro Atlanta	202	8 Projec	t Openin	g Year	(0)		(925) [3		2	Ann	ual Grov	wth Rate:	0.8%
Major (State) Road: SR 6	Speed Limit: 45 mph	204	8 Projec	t Design	Year	(0)	(170) 45	(550) 210	(205)	SB SR 5		K	(Factor*:	8%
Minor (Crossing) ST: SR 5	Speed Limit: 45 mph	- 1		E	EB SR 6	Peds 🖡	4	Û	\$	Peds	0	(0)	360]	
Willion (Grossing) GT. GTC 5			1850	(50)	310	Ð		tersectio		€	40	(35)	75) [1360]	
Major ST Direction: East/West	Area Type: Urban		1850 (970) [1255]	(850)	1,490		LINGIIII	4,345	o (03t).	4	710	(1780)	0 (197	
Intersection Control: Signal (turn la	anes on mainline)	1) [125	(70)	50	₽	4			₽		(160)	80	
		1	<u>S</u>	(0)	0	Peds + •	Ŷì.	Î	क्रे	-	WB SR	В		
Prepared By: Lily Hardmar	n Analyst: Lily Hardman		Peak Hou	r % Tru	cks	SR	90	560	35	0	Leger			
Date: 9/30/2020	Project ID: PI 0013733	EB	WB	NB	SB	NB	(85)	(350)	(40)	(0)	ı		eak Appro	
The numero	of this project is to improve energtions at	19%	19%	12%	12%		685	(475) [3	070]		, ,		eak Appro /olume (E:	
	of this project is to improve operations at on of SR 5 and SR 6.		•							Apr			6 - 0.3 / S	,
	8 Opening Year Volumes	J				20.4	P Doci	n Yea	r Volu	• • • • • • • • • • • • • • • • • • • •				
2020	315 (1035) [3325]					2040	•	(1265) [4		11163				
(0)	(190) (620) (225) 😤					(0)	(230)	(755)		R 5				
0	50 225 40 85					0	60	285	45	SB SI				
EB SR 6 Peds ↓		15]		Е	EB SR 6	Peds	ŶŊ.	Û	\$	Peds	0	(0)	865]	

45

785

55

WB SR 6

4

Peds

0

(0)

(40)

5

2028 Intersection Daily

Entering Volume (est):

4.815

①

605

(385)

750 (525) [3395]

命

45

(45)

				390 ((1265) [4	4070]				
			(0)	(230)	(755)	(280)	SR 5			
			0	60	285	45	SB 8			
	E	B SR 6	Peds	4	₽	\$	Peds	0	(0)	865]
249	(70)	415	Ð		ntersection	,	₽ E	55	(50)	30) [1
5 (13:	(1145)	2,010	仚	Enterin	ig Volum 5,900	e (est):	1	950	(2415)	1070 (2680) [1865]
2495 (1310) [1710]	(95)	70	₽		-,		₽	65	(215)	1070
710]	(0)	0	Peds	da da	Û	₽ P	Peds	WB SR	6	
			SR 5	120	755	50	0			
			NB ((115)	(480)	(50)	(0)			
				925	(645) [4	155]		-		

(55)

(940)

(75)(0)

2045 (1070) [1395]

340

1,650

55

0

 \Rightarrow

Ð,

Peds

SR 9 (95)

ቁ

100

Introduction: In 2005, SAFETEA-LU established the Highway Safety Improvement Program (HSIP) and mandated that each state prepare a Strategic Highway Safety Plan (SHSP) to prioritize safety funding investments. Intersections quickly became a common component of most states' SHSP emphasis areas and HSIP project lists, including Georgia's SHSP. Intersection Control Evaluation (ICE) policies and procedures represent a traceable and transparent procedure to streamline the evaluation of intersection control alternatives, and further leverage safety advancements for intersection improvements beyond just the safety program. Approximately one-third of all traffic fatalities and roughly seventy five percent of all traffic crashes in Georgia occur at or adjacent to intersections. Accordingly, the Georgia SHSP includes an emphasis on enhancing intersection safety to advance the Toward Zero Deaths vision embraced by the Georgia Governor's Office of Highway Safety (GOHS). This ICE tool was developed to support the ICE policy, developed and adopted to help ensure that intersection investments across the entire Georgia highway system are selected, prioritized and implemented with defensible benefits for safety towards those ends.

Tool Goal: The goal of this ICE tool is to provide a simplified and consistent way of importing traffic, safety, cost, environmental impact and stakeholder posture data to assess and quantify intersection control improvement benefits. The tool supports the ICE policy and procedures to provide traceability, transparency, consistency and accountability when identifying and selecting an intersection control solution that both meets project purpose and reflects overall best value in terms of specific performance-based criteria.

Requirements: An ICE is required for any intersection improvement (e.g. new or modified intersection, widening/reconstruction or corridor project, or work accomplished through a driveway or encroachment permit that affects an intersection) where: 1) the intersection includes at least one roadway designated as a State Route (State Highway System) or as part of the National Highway System; or 2) the intersection will be designed or constructed using State or Federal funding. In certain circumstances where an ICE would otherwise be required, the requirement may be waived based on appropriate evidence presented with a written request. (See the "Waiver" tab to review criteria that may make a project waiver eligible and for instructions to submit a waiver request to the Department). An ICE is not required when the proposed work does not include any changes to the intersection design, involves only routine traffic signal timing and equipment maintenance, or for driveway permits where the driveway is not a new leg to an already existing intersection on either 1) a divided, multi-lane highway with a closed median and only right-in/right-out access or 2) an undivided roadway where the development is not required to construct left and/or right turn lanes (as per the Driveway Manual and District Traffic Engineer).

Two-Stage A complete ICE process consists of two (2) distinct stages, and it is expected that the respective level of effort for completing both stages of ICE will correspond to the Process: magnitude and complexity of the intersection. Prior to starting an ICE, the District Traffic Engineer and/or State Traffic Engineer should be consulted for advice on an appropriate level of effort. The Stage 1 and Stage 2 ICE forms are designed minimize required data inputs using drop-down menu choices and limiting text entry. All fields shaded grey include drop down menu choices and all fields shaded blue require data entry. All other cells in the worksheet are locked.

Stage 1: Stage 1 should be conducted early in the project development process and is intended to inform which alternatives are worthy of further evaluation in Stage 2. Stage 1 serves Screening as a screening effort meant to eliminate non-competitive options and identify which alternatives merit further considerations based on their practical feasibility. Users should Decision use good engineering judgement in responding to the seven policy questions by selecting "Yes" or "No" in the drop-down boxes. Alternatives should not be summarily Record eliminated without due consideration, and reasons for eliminating or advancing an alternative should be documented in the "Screening Decision Justification" column.

Stage 2: Stage 2 involves a more detailed and familiar evaluation of the alternatives identified in Stage 1 in order to support the selection of a preferred alternative that may be advanced Alternative to detailed design. Stage 2 data entry may require the use of external analysis tools to determine costs, operations and/or safety data that, combined with environmental and Selection stakeholder posture data, form the basis of the ICE evaluation. A separate "CostEst" worksheet tab helps users develop pre-planning-level cost estimates for each Stage 2 Decision alternative evaluated, and a separate Users Guide has been prepared to give guidance on Stage 1 and Stage 2 data entry. Once all data is entered, each alternative is scored Record and ranked, with the results reported at the bottom of the Stage 2 worksheet to inform on the best of the intersection controls evaluated for project recommendation.

Documentation: A complete ICE document consists of the combination of the outputs from either a completed and signed waiver form or both Stage 1 and Stage 2 worksheets (along with supporting costing and/or environmental documentation), to be included in the approved project Concept Report (or equivalent) or as a stand-alone document.



GDOT ICE STAGE 1: SCREENING DECISION RECORD

ICE Version 2.15 | Revised 07/01/2019

GD01	r DI #	0013733								ICE Version 2.15 Revised 07/01/2019			
	t Location:	SR 6 @ SR 5	Note: Up to 5 alternatives may be selected and evaluated; Use this ICE Stage 1 to screen 5 or fewer alternatives to evaluate in Stage 2 The provided by the p										
	ng Control:	Signal (turn lanes on mainline)	evaluate	ed; Use thi	s ICE) SIII	ilence	E. / W. ~				
	red by:	Lily Hardman	Stage 1	to screen	5 or	red digit	Minance	COLUMNICACITY	Haffigte.	Life ret.			
Date:		9/30/2020	tewer al	ternatives e in Stage	το	11110 1 Oct	o steps	indion to self	inglith, roigh	NO CO WILL SE SILE			
ea si Reco	ch control typhould be eval bord; enter just rsection Alte	"No" to each policy question for the to identify which alternatives that and the Stage 2 Decision tification in the rightmost column rnative (see "Intersections" tab for	08	Weitging of the state of the st	Maria Ma Ma Ma Ma Ma Ma Ma Ma Ma Ma Ma Ma Ma	A CO	Control of the contro			A CONSIDER OF THE PROPERTY OF			
deta	iled descriptio	n of intersection/interchange type)	V. V	<u> </u>	``/ _' \.` \&	<u>, </u>	⁸ / %` %	6 6 6 V	3 ³ \ \ \ ` \	Screening Decision Justification:			
	Conventiona	(Minor Stop)	No	No	Yes	No	No	No	No	Not considered - Results in LOS F			
	Conventiona	(All-Way Stop)	No	No	Yes	No	No	No	No	Not considered - Results in LOS F			
	Mini Rounda	No	Yes	Yes	No	No	No	No	Control not appropriate for high-speed, multi-lane roadway				
	Single Lane	Roundabout	No	Yes	Yes	No	No	No	No	Not considered - Results in LOS F			
tions	Multilane Ro	undabout	No	Yes	Yes	No	No	No	No	Not considered - Results in LOS F			
ersec	RCUT (stop	control)	No	Yes	Yes	No	No	No	No	Not considered - Minor road volumes are too high			
Unsignalized Intersections	RIRO w/dow	n stream U-Turn	No	Yes	Yes	No	No	No	No	Not considered - Thru traffic volumes too high			
gnaliz	High-T (unsi	gnalized)	No	No	No	No	No	No	No	Not considered - Not a three-leg intersection			
Unsiç	Offset-T Inte	rsections	No	No	No	No	No	No	No	Not considered - Minor road through volumes are too high			
	Diamond Inte	erch (Stop Control)	No	No	No	No	No	No	No	Not a freeway facility, an interchange is not justified			
		erch (RAB Control)	No	No	No	No	No	No	No	Interchange not justified at this location			
	Add LT Lanes No RT Lane Ir		Yes	No	No	Yes	Yes	Yes	No	Not a freeway facility, an interchange is not justified			
	Other unsign	alized (provide description):	No	No	No	No	No	No	No	N/A			
	Traffic Signa	I	Yes	No	Yes	Yes	Yes	Yes	Yes	Potential solution to evaluate			
	Median U-Tu	rn (Indirect Left)	No	Yes	No	No	No	No	No	Minor road volume too high. Minor road total volume to the total intersection			
	RCUT (signa	lized)	No	Yes	No	No	No	No	No	Not considered - Minor road volumes are too high			
ဟ	Displaced Le	ft Turn (CFI)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Potential solution to evaluate			
ection	Continuous (Green-T	No	No	No	No	No	No	No	Not considered - Not a three-leg intersection			
nterse	Jughandle		Yes	Yes	Yes	No	No	No	No	Left turn volume from major road is too high and minor road volume is too high			
ized l	Quadrant Ro	adway	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Potential solution to evaluate due to heavy thru and left turn volumes			
Signalized Intersections	Diamond Inte	erch (Signal Control)	Yes	Yes	Yes	Yes	No	No	No	Not a freeway facility, an interchange is not justified			
	Diverging Dia	amond	Yes	Yes	Yes	Yes	No	No	No	Not a freeway facility, an interchange is not justified			
	Single Point		Yes	Yes	Yes	Yes	No	No	No	Not a freeway facility, an interchange is not justified			
	No LT Lane In No RT Lane Ir		No	No	No	No	No	No	No	N/A			
	Other Signal	zed (provide description):	No	No	No	No	No	No	No	N/A			
		= Intersection type selected fo			-								



GDOT ICE STAGE 2: ALTERNATIVE SELECTION DECISION RECORD

ICE Version 2.15 | Revised 07/01/2019

GDOT PI # (or N/A) 0013733 GDOT District: 7 - Metro Atlanta Date: 9/30/2020

County: Douglas Area Type: Urban Agency/Firm: Lily Hardman

Project Location: SR 6 @ SR 5 Analyst: Lily Hardman

Existing Intersection Control: Signal (turn lanes on mainline)

Type of Analysis: Conventional Non-Safety Funded Project

Opening / Design Year Traffic Operation	s				Crash Data: Enter most	
Intersection meets signal/AWS warrants?	Meets Sign	al Warrants	Complete Streets		recent 5 years of crash data	PDO
Traffic Analysis Measure of Effectiveness	Intersect	ion Delay	Warrants Met?		Angle	59
Traffic Analysis Software Used	HC	S7	✓ PEDESTRIANS	ре	Head-On	5
Analysis Time Period	AM Peak Hr	PM Peak Hr	BICYCLES	7	Rear End	145
2028 Opening Yr No-Build Peak Hr Intersection Delay	60.6 sec	305.7 sec	✓ TRANSIT	rast	Sideswipe - same	29
2028 Opening Yr No-Build Peak Hr Intersection V/C	0.95	1.51		S	Sideswipe - opposite	3
2048 Design Yr No-Build Peak Hr Intersection Delay	171.7 sec	477.9 sec			Not Collision w/Motor Veh	5
2048 Design Yr No-Build Peak Hr Intersection V/C ratio	1.24	1.92			TOTALS:	246
			•		* Number of crashes resulting	in injuries / fa

	!				
	Crash Data: Enter most	C	ty		
	recent 5 years of crash data	PDO	PDO Injury Crash* Fatal Cras		
	Angle	59	40	0	28%
Туре	Head-On	5	5	0	3%
		145	48	3	56%
Srash	Sideswipe - same	29	4	0	9%
S	Sideswipe - opposite	3	0	0	1%
	Not Collision w/Motor Veh	5	2	0	2%
	TOTALS:	246	99	3	348

^{*} Number of crashes resulting in injuries / fatalities, not number of persons

Alternatives Analysis:	Altern	ative 1	Altern	ative 2	Altern	ative 3	Alternative 4	Alternative 5
Proposed Control Type/Improvement:				Left Turn FI)	Quadrant	Roadway	N/A	N/A
Project Cost: (From CostEst Worksheet)	new pavement	or overlay assun	Additional de	scription here	Additional des	scription here		
Construction Cost	\$4,42		\$13,22	29,556	\$10,62	7,292		
ROW Cost	\$697	,906	\$697	,906	\$2,944,225			
Environmental Cost	\$145	,000	\$100	,000	\$70,	000		
Reimbursable Utility Cost	\$185	,000	\$1,50	0,000	\$975	,000		
Design & Contingency Cost	\$1,346,000		\$2,71	0,000	\$756	,000		
Cost Adjustment (justification reg'd)	0%		0	%	0,	%		
Total Cost	\$6,79	6,607	\$18,23	37,462	\$15,37	2,517		
Traffic Operations:	User Cos	t Override	User Cos	t Override	User Cost	Override		
Traffic Analysis Software Used	НС	S7	VISS	IM 9.0	Sync	hro 9		
Analysis Period	AM Peak Hr	PM Peak Hr	AM Peak Hr	PM Peak Hr	AM Peak Hr	PM Peak Hr		
2048 Design Yr Build Intersection Delay		395.7 sec	28.8 sec	32.8 sec	29.4 sec	23.7 sec		
2048 Design Yr Build Intersection V/C	1.12	1.72	1.08	1.46	1.03	0.97		
Safety Analysis:			•		•	•		v
Predefined CRF: PDO	0	%	33	3%	128	3%		
Predefined CRF: Fatal/Inj	0%		50% 114%		4%			
Predefined CRF Source:	N/A		FHWA-HF	RT-09-055	TRB Sympo	sium Study		
User Defined CRF: PDO					33	1%		
User Defined CRF: Fatal/Inj					50	1%		
User Defined CRF Source								
(write in if applicable):								
Environmental Impacts:1								
Historic District/Property	No	ne	No	ne	No	ne		
Archaeology Resources	Min	imal	Min	imal	No	ne		
Graveyard	No	ne	No	ne	No	ne		
Stream	Signi	ficant	Signi	ficant	Mini	imal		
Underground Tank/Hazmat	No	ne	No	ne	No	ne		
Park Land	No	ne	No	ne	No	ne		
EJ Community	No	ne	No	ne	No	ne		
Wooded Area	No	ne	No	ne	Signi	ficant		
Wetland		ne		ne		ne		
Stakeholder Posture:	i de la companya del companya de la companya de la companya del companya de la companya del la companya de la c						rdize project delivery using "E cumentation will be included w	
Local Community Support Neutral			utral		ıtral			
GDOT Support	* ''			ortive	Stro			
								1
Final ICE Stage 2 Score:		.1		.8		.6		
Rank of Control Type Alternatives:		3	2	2	1			

Note: Stage 2 score is not given (shown as "-") if signal or AWS is selected as control type but respective warrants are not met

Provide additional comments and/or explain any unique analysis inputs, or results (as necessary):



GDOT ICE TOOL: COST ESTIMATING AID

ICE Version 2.15 | Revised 07/01/2019

Project Information

Location: SR 6 @ SR 5

County: Douglas

Date: 9/30/2020

GDOT PI # (or N/A): 0013733

Area Type: Urban

Agency/Firm: Lily Hardman

Existing Intersection Control: Signal (turn lanes on mainline

GDOT District: 7 - Metro Atlanta

Analyst: Lily Hardman

Type of Analysis: Conventional Non-Safety Funded Project

Major Street Direction: East/West

Table 1: Existing Conditions		EB SR 6			WB SR 6			NB SR 5			SB SR 5	
Movement	Left Turn	Thru	Right Turn									
Number of Lanes	1	2	1	1	2	1	1	2	1	1	2	1
Lane Widths*	12'	12'	22'	12'	12'	12'	12'	12'	16'	12'	12'	16'
Bay Length**	170'		195'	840'		745'	400'		100'	300'		180'
Median Width		14'			14'			0'			0'	
Right-of-Way	·	210'						130'				

Table 2: Proposed Conditions	Traffic Signal	Displaced Left Turn (CFI)	Quadrant Roadway	N/A	N/A
Proposed Pavement Type	F.D. Asphalt	F.D. Asphalt	F.D. Asphalt	F.D. Asphalt	F.D. Asphalt
Reimbursable Utility:	Moderate	Significant	Moderate	Minimal	Minimal
# of Driveway(s) Impacted	2	6	7	0	0
Modify/Replace Traffic Signal	1	10	3	0	0
Lighting Poles (ea)	0	25	0	0	0
Flashing Beacons (ea)	0	0	0	0	0
RFB/PHB Ped Crossings (ea)	4	12	12	0	0
New/Replace Sidewalks (LF)	4972'	9279'	304'	0'	0'
New/Replace Cross Drains (LF)	0'	0'	0'	0'	0'
New/Replace Guardrail (LF)	2979'	2979'	265'	0'	0'
New Retaining Wall (LF)	800'	900'	0'	0'	0'
Bridge:New/Widen/Replace (sqft)	8093	11587	0	0	0
Add'l ROW/Easements/Demolition	\$0	\$0	\$0	\$0	\$0

Site Context		
Topography:	Rolling	
Traffic Mgmt Plan:	Maintain Traffic	
Project Size:	Single Intersection	Exis

Intersections	
Signal Poles	Mast Arm
Design Vehicle	WB-67
Existing Interchange?	No

Cost Multipliers Grading Complete: 20% Reimbursable Utility: 5% Traffic Control: 20% Project Size: 0% Prelim Engineering: 15% Project Contingency:

<u>Roundabouts</u>	
Inscribed DIA - Mini	
Inscribed DIA - Single	140
Inscribed DIA - Multi	
Circulating Lane Width	18
OW Costs	

ROW Costs	
evalent ROW Type:	Commercial
ROW Cost/Acre:	
ROW Multiplier:	1.6

Table 3: Control Type Cost Breakdown

	Per Ln Mi		Traffic	: Signal	Displaced L	eft Turn (CFI)	Quadrant	Roadway	N/A	A	N/	A
Pay Item	Unit Cost	Unit Cost	Quantity	Cost	Quantity	Cost	Quantity	Cost	Quantity	Cost	Quantity	Cost
New Construction (Base & Pave)	\$500K/LM	\$9.47/sqft	66,542	\$630,133	130,226	\$1,233,201	98,863	\$936,203	#N/A	#N/A		
Roadway Mill and Overlay	\$64K/LM	\$1.21/sqft	0	\$0	0	\$0	0	\$0	#N/A	#N/A		
Urban C&G/Drainage - both sides	441-6720	\$19.08/LF	200	\$3,816	5,180	\$98,834	5,200	\$99,216	#N/A	#N/A		
Rural Typ Drainage - both sides	\$150K/LM	\$2.84/LF	0	\$0	0	\$0	0	\$0	#N/A	#N/A		
Concrete Island (sqyd)	n/a	\$51.58/syd	0	\$0	1,200	\$61,896	380	\$19,600	#N/A	#N/A		
Median Landscaping	\$100K/LM	\$1.89/LF	0	\$0	0	\$0	7,800	\$14,773	#N/A	#N/A		
Typical Driveways Impacted (ea)	n/a	\$7,500 ea	2	\$15,000	6	\$45,000	7	\$52,500	#N/A	#N/A		
Typical E&S Control Temp/Perm	\$150K/LM	\$34.09/LF	100	\$3,409	2,590	\$88,295	2,600	\$88,636	#N/A	#N/A		
Roundabout Truck Apron (sqft)	n/a	\$10.25/sqft	0	\$0	0	\$0	0	\$0	#N/A	#N/A		
Signing & Marking	\$0	\$22.73/LF	100	\$2,273	2,590	\$58,871	2,600	\$59,098	#N/A	#N/A		
Flashing Beacon (ea)	n/a	\$20,000 ea	0	\$0	0	\$0	0	\$0	#N/A	#N/A		
New Traffic Signal (Mast Arms)	674-1000	\$182,575ea	1	\$182,575	10	\$1,825,750	3	\$547,725	#N/A	#N/A		
Lighting (per pole)	n/a	\$5,607 ea	0	\$0	25	\$140,175	0	\$0	#N/A	#N/A		
Signalized Ped Crossings (ea)	n/a	\$19,637 ea	4	\$78,548	12	\$235,644	12	\$235,644	#N/A	#N/A		
6' Sidewalk (LF)	n/a	\$49.23/LF	4,972	\$244,772	9,279	\$456,805	304	\$14,966	#N/A	#N/A		
New/replace cross drains (LF)	n/a	\$41.31/LF	0	\$0	0	\$0	0	\$0	#N/A	#N/A		
Typical Guardrail (LF)	n/a	\$65.56/LF	2979	\$195,303	2979	\$195,303	265	\$17,373	#N/A	#N/A		
Retaining Wall (LF)	n/a	\$808.52/LF	800	\$646,816	900	\$727,668	0	\$0	#N/A	#N/A		
Bridge widen/replace (SF)	n/a	\$210/sqft	8,093	\$1,699,530	11,587	\$2,433,270	0	\$0	#N/A	#N/A		
Env Costs (from Stage 2 impacts)	n/a	n/a	0	\$145,000	0	\$145,000	0	\$75,000	#N/A	#N/A		
Grading Complete - 20%	n/a	n/a		\$0		\$1,549,143		\$432,147		#N/A		
Traffic Control - 20%	n/a	n/a		\$0		\$1,549,143		\$432,147		#N/A		
Reimbrusable Utility	n/a	n/a		\$185,109		\$760,071		\$104,287		#N/A		
Preliminary Engineering - 15%	n/a	n/a		\$577,076		\$1,161,857		\$324,110		#N/A		
Contigency - 20%	n/a	n/a		\$769,435		\$1,549,143		\$432,147		#N/A		
ROW Cost/Acre: Commercial	n/a	\$262,500ac		\$236,250		\$223,755		\$1,246,875		#N/A		
Add'l ROW / Displacement / Demo	n/a	n/a		\$0		\$0		\$0		#N/A		
ROW Multiplier - 1.6	n/a	n/a		\$141,750		\$134,253		\$748,125		#N/A		
Project Scale Reduction - 0.0%	n/a	n/a		\$0		\$0		\$0		#N/A		
Grand Total Costs				\$5,757,000		\$14,673,000		\$5,881,000		#N/A		

Table 4: Assumption Adjustments/Quantity Overrides

	<u> </u>									
Alternative Evaluated	Assumptions:	Pavement	Calculated	User	Calculated	User	Major ST	User	Minor ST	User
Alternative Evaluated	Assumptions.	raveillelli	ROW (ac)	Override*	Pavement	Override*	Const Limits	Override*	Const Limits	Override*
Traffic Signal	Pave/Overlay Intersection	F.D. Asphalt	0.00	0.9	0	66,542.0	50	0.0	50	0.0
Displaced Left Turn (CFI)	2-approach CFI	F.D. Asphalt	-0.57	0.9	48,000	130,226.0	2,000	0.0	590	0.0
Quadrant Roadway	New Roadway	F.D. Asphalt	5.00	4.8	36,000	98,863.0	1,310	0.0	1,290	0.0
N/A	#N/A	F.D. Asphalt	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
N/A	#N/A	F.D. Asphalt	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A



GDOT INTERSECTION CONTROL EVALUATION (ICE) WAIVER FORM

ICE Version 2.15 | Revised 07/01/2019

Waiver Request - N/A

In certain circumstances where an ICE would otherwise be required, an ICE may be waived based on appropriate evidence presented with a written request. Scenarios in which an ICE waiver request may be considered include:

- 1. Proposed improvements do not substantially alter the character of the intersection, and are considered minor in nature, such as extending existing turn lane(s) or modifying signal phasing at an existing traffic signal
- 2. The intersection consists of a public roadway intersecting a divided, multilane roadway where the access will be limited to a closed median with only right-in/right-out access that will operate acceptably; or
- The intersection is along an undivided, two-lane roadway that will not be widened and meets the following criteria:
 - Low risk in terms of exposure (total intersection entering volume less than 1,000 vehicles /day)
 - · Latest 5 years of crash history is not indicative of a crash problem (no discernible crash patterns coupled with low crash frequency and severity)
 - Layout has no unusual or undesirable geometric features (such as restricted sight distance)
 - · The proposed changes are not expected to adversely affect safety

If only one alternative is determined to be feasible from the ICE Stage 1, then a waiver may be submitted in lieu of completing ICE Stage 2. The waiver must clearly explain why there is no other feasible alternative. A Waiver Form should also be submitted to document an agreed upon decision to select a preferred alternative other than the highest scoring alternative in Stage 2.

ICE waiver forms with supporting documentation should be submitted for approval to the Office of Traffic Operations or District Engineer (depending on Waiver level). Questions regarding the waiver process should be routed to the State Traffic Engineer.

Project Information: Location: SR 6 @ SR 5 County: Douglas

GDOT District: 7 - Metro Atlanta

Area Type: Urban

Existing Intersection Control: Signal (turn lanes on mainline)

Traffic and Operations Data:1

Intersection meets signal/AWS warrants?	Meets Sign	al Warrants
Traffic Analysis Type:	Intersecti	ion Delay
Existing Avg Daily Traffic (Major Street):	()
Existing Avg Daily Traffic (Minor Street):	()
Analysis Period:	AM Peak	PM Peak
2028 Opening Yr Peak Hour Intersection Delay:	0.0 sec	0.0 sec
2028 Opening Yr Peak Hour Intersection V/C:	0.00	0.00
2048 Design Yr Peak Hour Intersection Delay:	0.0 sec	0.0 sec
2048 Design Yr Peak Hour Intersection V/C:	0.00	0.00

¹Crash data required for all existing intersections. ADT's required if available (from data collected or nearest GDOT count station site). Capacity data is optional unless needed to justify basis of the waiver request.

GDOT PI # (or N/A): 0013733

Requested By: Roadway Design Prepared By: Lily Hardman Analyst: Lily Hardman Date: 9/30/2020

Waiver Request Type: --- select one ---

	Crash Data (Required): ¹						
	Crash Data: Enter most	Crash Severity					
	recent 5 years of crash data	PDO	Injury Crash*	Fatal Crash*			
_	Angle	59	40	0			
Crash Type	Head-On	5	5	0			
sh 1	Rear End	145	48	3			
Cra	Sideswipe - same	29	4	0			
	Sideswipe - opposite	3	0	0			
	Not Collision w/Motor Veh	5	2	0			
	TOTALS:	246	99	3			

^{*} Number of crashes resulting in injuries / fatalities, not number of persons

Description of Work / Justification for Waiver (Required):			
Proposed Intersection Control:	select one		
REQUESTED BY:		Date:	_
Title:			
APPROVED BY:		Date:	
Name:			
	District Engineer or (Approved Delegate)		



ICE ENVIRONMENTAL FACTORS

ICE Version 2.15 | Revised 07/01/2019

Project Information

GDOT District: 7 - Metro Atlanta

Date: 9/30/2020

Requested By: Roadway Design

Area Type: Urban

County: Douglas Prepared By: Lily Hardman Project Location: SR 6 @ SR 5 Analyst: Lily Hardman

Existing Intersection Control: Signal (turn lanes on mainline)

Environmental Factors

In the box below, document any significant environmental factors for any alternative considered. Include a plan and costs for mitigation that retains the proposed intersection type as a viable alternative. Include in ICE documentation package only if one or more alternatives have significant impacts.

doddffortation package crity if cric c	more alternatives have significant impacts.
Proposed Intersection Control #1:	Traffic Signal
None	
Proposed Intersection Control #2:	Displaced Left Turn (CFI)
None	
Proposed Intersection Control #3:	Quadrant Roadway
None	
Proposed Intersection Control #4:	N/A
None	
Proposed Intersection Control #5:	N/A
None	

Hardman, Lilian

From: Raymond, Christopher

Sent:Friday, March 20, 2020 8:19 AMTo:Hardman, Lilian; Trevorrow, Daniel JCc:Boockholdt, Steven C; Rudd, Christopher

Subject: RE: 0013733 - SR 5/US 78 @ SR 6/US 278 ICE comments

Attachments: Virginia_State_Preferred_CMF_List.pdf

Hey Lily,

Everything looks good. At this point, my only comment would be to include a more realistic CMF for quadrant roadway. There is an active issue with ICE that shows over 100% crash reductions with the quadrant in some cases. I've attached VA CMF table that I think should provide you with what you need.

Chris Raymond, PE

Traffic Operations Manager



Office of Traffic Operations 935 United Avenue Atlanta, GA, 30316 404.635.2809

From: Hardman, Lilian < lhardman@dot.ga.gov>

Sent: Thursday, March 5, 2020 1:43 PM

To: Raymond, Christopher <craymond@dot.ga.gov>; Trevorrow, Daniel J <DTrevorrow@dot.ga.gov> **Cc:** Boockholdt, Steven C <SBoockholdt@dot.ga.gov>; Rudd, Christopher <crudd@dot.ga.gov>

Subject: FW: 0013733 - SR 5/US 78 @ SR 6/US 278 ICE comments

Good Afternoon Chris,

I just wanted to follow up again since I haven't heard back from you as we are approaching the concept report submittal deadline for this project.

Thank You!

Lily Hardman, P.E.

Civil Engineer 4



Office of Roadway Design 27th Floor 600 West Peachtree St. NW

Hardman, Lilian

From: Raymond, Christopher

Sent: Friday, August 30, 2019 9:23 AM **To:** Hardman, Lilian; Trevorrow, Daniel J

Cc: Boockholdt, Steven C; Smith-Calloway, Andrea L; Pearson, Andrew C

Subject: RE: PI 0013733 Douglas County ICE Report

He Lilian,

I'm sorry we didn't get these comments back to you sooner.... Luckily, even with the changes, the preferred alternative does not change.

- Date of Collision is between 1/1/2014 and 12/31/2018 is on par with the crash data provided
- Consider using GDOT roundabout tool when doing capacity analysis for roundabout alternatives. The roundabout may fail due to the high ADT volumes in the design year, no need to redo analysis
- Use a consistent method when applying the heavy truck percentage and roadway speed limits within the various alternative intersection models (suggest using 18% HV across the board for each approach and alternative)

Introduction Sheet:

• Provide growth rate, K factor and ADT volumes. The ADT volumes will help indicate if the capacity of a roundabout will work or not at the intersection

Alternatives analysis (Stage 2)

• Underneath the Proposed Control Type/Improvement row, specify the type model used to determine intersection delay and v/c ratio

2048 Design Yr Build Intersection V/C:

- Vissim is a micro simulation, how was the v/c ratio determined? Provide V/C ratio calculations
- The Synchro 9 quadrant roadway reports of the intersection summary provide different v/c ratios than what's provided in the traffic operations section the 2048 quadrant signal report discloses a 1.55 v/c. (but due to the high crash rate at the intersection, I believe the quadrant still ranks the highest alternative for implementation.)
- Provide documentation that reinforces the stakeholders support

Question: How will the proposed project work in conjunction with another proposed project in the area (PI 0010821)?

Chris Raymond, PE

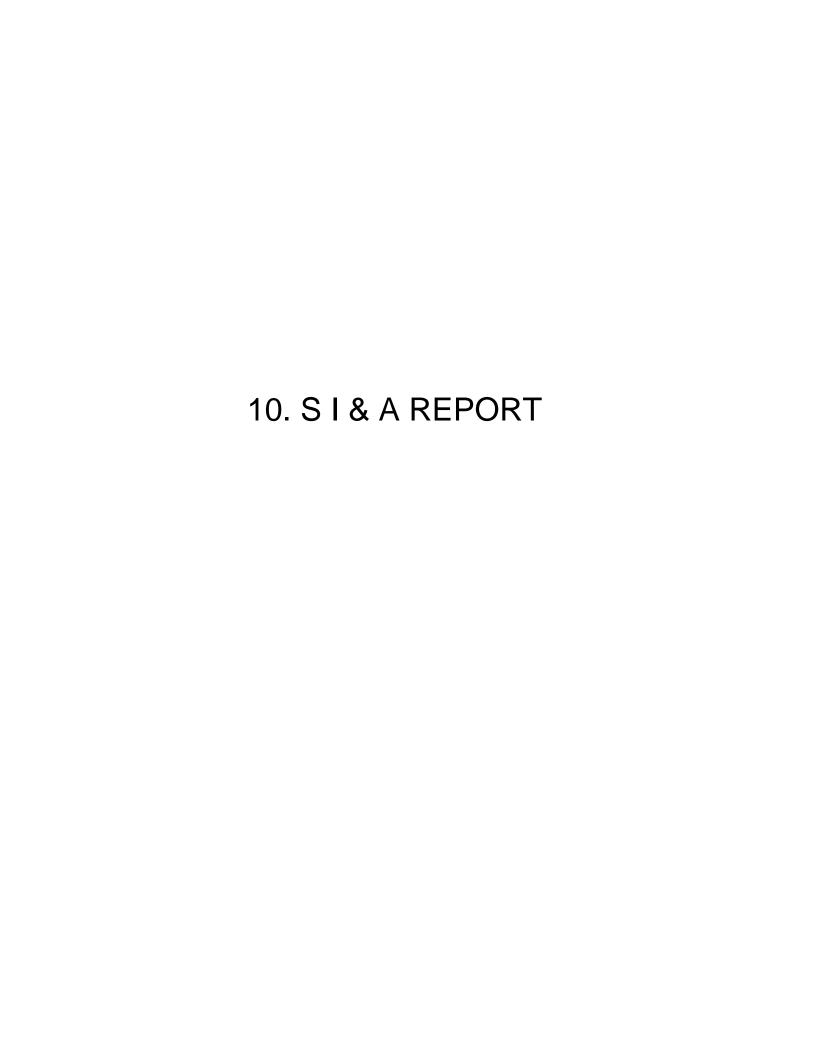
State Traffic Operations Manager



Office of Traffic Operations 935 United Avenue Atlanta, GA, 30316 404.635,2809

From: Hardman, Lilian < lhardman@dot.ga.gov> Sent: Monday, August 26, 2019 9:53 AM

To: Trevorrow, Daniel J < DTrevorrow@dot.ga.gov>; Raymond, Christopher < craymond@dot.ga.gov>



Georgia Department of Transportation **Bridge Inventory Data Listing**

0- Not Applicable

Processed Date:Mar-14-2018 10:47:07 AM

Parameters: Bridge Serial Number

Bridge Serial Number: 097-0006-0

Location & Geography

097-0006-0 Structure ID: 200 Bridge Information: 06 *6 Feature Intersected: SWEETWATER CREEK *7A Route Number Carried: SR00006 *7B Facility Carried: THORNTON ROAD 9 Location: 7 MI NE OF DOUGLASVILLE 2 GDOT District: 4841700000 - D7 District Seven Chamblee *91 Inspection Frequency: 24 Date: Jul-26-2017 92A Fracture Critical Insp. Freq: Date: Feb-01-1901 Feb-01-1901 92B Underwater Insp Freq: 0 Date: 92C Other Spc. Insp Freq: 0 Date: Feb-01-1901 00000 * 4 Place Code: *5A Inventory Route(O/U): 5B Route Type: 3 - State 5C Service Designation: 1- Mainline 5D Route Number: 00006 5E Directional Suffix: 0. Not applicable *16 Latitude: 33 - 47.7828 84 - 38,4630 *17 Longtitude: 98A Border Bridge: 0 98B: GA% 00 99 ID Number: 000000000000000

12 Base Highway Network: Yes 971000600 13A LRS Inventory Route:

13B Sub Inventory Route: 0

*100 STRAHNET:

101 Parallel Structure: N. No parallel structure exists

*102 Direction of Traffic 2- Two Way *264 Road Inventory Mile Post: 0.96 *208 Inspection Area: Area 09

*104 Highway System: 1-Inventory Route is on the NHS *26 Functional Classification: 14- Urban - Other Principal Arterial

*204A Federal Route Type: F - Primary *204B Federal Route Number: 01781 105 Federal Lands Highway: 0. Not applicable

*110 Truck Route: 1- The Feature is part of the National Network For

0- The Feature is not a STRAHNET route.

Trucks

217 Benchmark Elevation: 0000.00

* Location ID No 097-00006D-000 96F **County: Douglas**

218 Datum:

*19 Bypass Length: *20 Toll: 3- On a Free Road or Non-Highway *21 Maintenance Responsibility: 01-State Highway Agency *22 Owner: 01-State Highway Agency *31 Design Load: 6- HS 20 + Mod (2-24,000# Axles @ 4ft Ctrs., when they govern) 37 Historical Significance: 5- Not eligible for the National Register of Historic Places 205 Congressional District: 27 Year Constructed: 1963 106 Year Reconstructed: 1991 33 Bridge Median: 2-Closed (no barrier) 34 Skew: 15

4-Steel (Continuous)

A:0- Other B: 0- Other

1. Concrete

0. None

0. None

2-Stringer/Multi-Beam or Girder

A: Vertical: NoB: Horizontal: No

N - Navigation Control item coded 0, or Feature not a waterway

1 - C-I-P Portland Cement Concrete - Epoxy Coated Rebars

35 Structure Flared: Nο 38 Navigation Control: 0- Navigation is not controlled by an Agency

213 Special Steel Design: 0- Not applicable or other

267A Type Paint Super Structure:

5- Waterborne System (Type VI or VII) Year: 2001 0- Not Applicable Year: 0000

267B Type Paint Sub Structure: *42A Type of Service On: 1-Highway

*42B Type of Service Under: 5-Waterway 214A Movable Bridge: 0 214B Operator on Duty:

A- Spread footing. O. Concrete M. Steel O. Concrete 203 Type Bridge:

259 Pile Encasement:

*43A Structure Type Main material: *43B Structure Type Main Type:

45 Number of Main Spans: 44 Structure Type Approach:

46 Number of Approach Spans:

226 Bridge Curve: 111 Pier Protection:

107 Deck Structure Type: 108A Wearing Surface Type:

108B Membrane Type: 108C Deck Protection:

265 Underwater Inspection Area:

SUFF. RATING: 63.5

Signs & Attachments

225 Expansion Joint Type: 242 Deck Drains: 1- Open Scuppers. 243A Parapet Location: 0- None present. 0.00 243B Parapet Height:

243C Parapet Width: 0.00 238A Curb Height: 0.0 238B Curb Material: 0- None

239A Handrail Left: 9- Concrete New Jersey Type Barrier. 239B Handrail Right: 9- Concrete New Jersey Type Barrier.

15- Evazote Joint.

5- Right side only, approach and continuous.

3- Forward and Rear.

*240 Median Barrier Rail: 0- None. 241A Bridge Median Height: 0 241B Bridge Median Width:

*230A Guardrail Location Direction Rear: *230B Guardrail Location Direction Fwrd: *230C Guardrail Location Opposing Rear:

*230D Guardrail Location Opposing Fwrd:

244 Approach Slab:

224 Retaining Wall: 0- None. 233 Posted Speed Limit: 45 236 Warning Sign: Nο 234 Delineator: No

235 Hazard Boards: 237A Gas: 21- Bottom Left. 237B Water: 00- Not Applicable 237C Electric: 00- Not Applicable 237D Telephone: 00- Not Applicable 237E Sewer: 00- Not Applicable

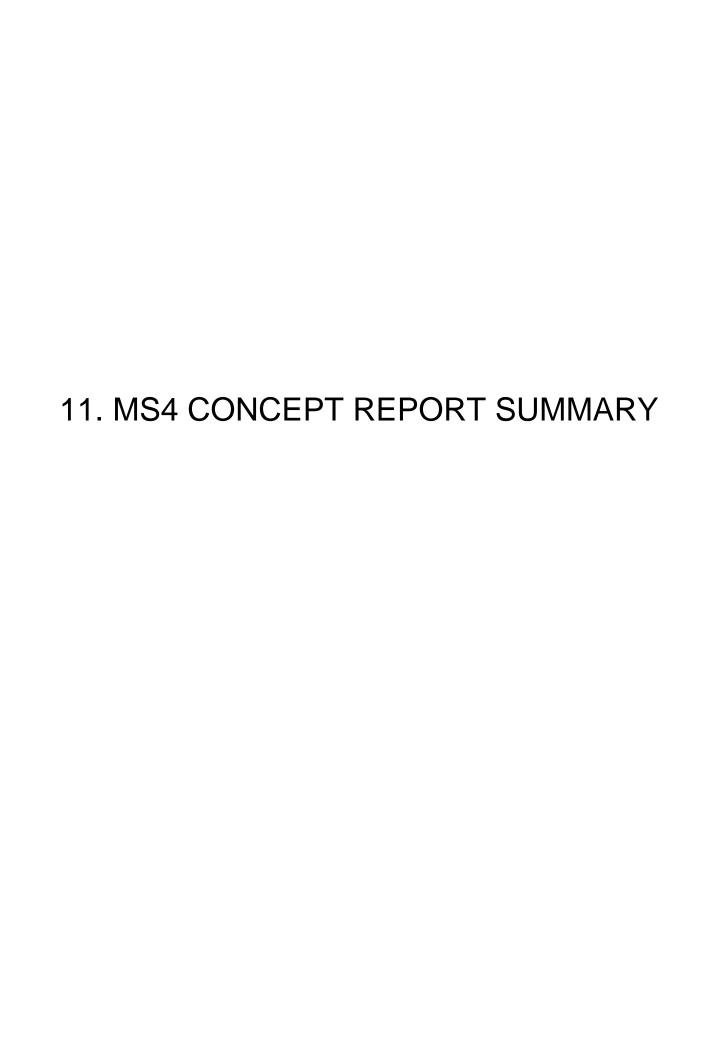
247A Lighting: Street: No 247B Navigation: No 247C Aerial: No *248 County Continuity No.:

36A Bridge Railings: 1- Meets current standards 36B Transition: 1- Meets current standards 36C Approach Guardrail: 1- Meets current standards 36D Approach Guardrail Ends: 1- Meets current standards

Georgia Department of Transportation Bridge Inventory Data Listing

Processed Date:Mar-14-2018 10:47:07 AM

Bridge Serial Number: 097-0006-0		County: Douglas		SUFF. RATING: 63.5	
Programming Data		Measurements:		Ratings and Posting	
201 Project Number:	MLP-6 (31)/ FR-178-1 (28)	*29 AADT:	59950	65 Inventory Rating Method:	1-Load Factor (LF)
202 Plans Available:	1- Plans at General Office.	*30 AADT Year:	2012	63 Operating Rating Method:	1-Load Factor (LF)
249 Proposed Project Number:	000000000000000000000000000000000000000	109 % Truck Traffic:	1	66A Inventory Type:	2 - HS loading.
250A Reconstruction Approval Status:	No	* 28A Lanes On:	7	66B Inventory Rating:	19
250B Route Approval Status:	No	*28B Lanes Under:	0	64A Operating Type:	2 - HS loading.
250C Approval Status Definition:	0	210A Tracks On:	00	64B Operating Rating:	33
250D Approval Status Federal:	0	210B Tracks Under:	0	231Calculated Loads	Posting Required
251Project Identification Number:	0000000	* 48 Maximum Span Length:	96	231A H-Modified:	21 No
252 Contract Date:	Feb-01-1901	* 49 Structure Length:	250	231B Type3/Tandem:	24 No
260 Seismic Number:	00000	51 Bridge Roadway Width:	111.9'	231C Timber:	26 No
75A Type Work Proposed:	0- Not Applicable	52 Deck Width:	115.2'	231D HS-Modified:	25 No
75B Work Done by:	0- Initial Inventory	* 47 Total Horizontal Clearance:	99.9'	231E Type 3S2:	27 No
94 Bridge Improvement Cost:(X\$1,000)	\$2,309	50A Curb / Sidewalk Width Left:	0.0	231F Piggyback:	28 No
95 Roadway Improvement Cost: (X\$1,000)	\$231	50B Curb / Sidewalk Width Right:	0.0	261 H Inventory Rating:	24
96 Total Improvement Cost: (X\$1,000)	\$3463	32 Approach Rdwy. Width:	84.0'	262 H Operating Rating:	41
76 Improvement Length:	0.0'	*229 Approach Roadway		67 Structural Evaluation:	4
97 Year Improvement Cost Based On:	2013	Rear Shoulder Left: Width: 2	Right Width: 4.0 Type: 2 - Asphalt.	58 Deck Condition:	6 - Satisfactory Condition
114 Future AADT:	89925	Fwd Shoulder: Left Width: 2	Right Width:4.0 Type: 2 - Asphalt.	59 Superstructure Condition:	7 - Good Condition
115 Future AADT Year:	2032	Rear Pavement: Width: 36.0	Type:2- Asphalt.	* 227 Collision Damage:	
		Forward Pavement: Width: 36.0	Type:2- Asphalt.	60A Substructure Condition:	7 - Good Condition
		Intersection Rear: 1	Forward:0	60B Scour Condition:	6 - Satisfactory Condition
Hydraulic Data		53 Minimum Vertical Clearance Over Rd:	99' 99"	60C Underwater Condition:	N - Not Applicable
113 Scour Critical:	Foundations stable for conditions; scour within limits	54A Under Reference Feature:	N- Feature not a highway or railroad.	71 Waterway Adequacy:	8-Equal to present desirable criteria.
216A Water Depth:	3	54B Minimum Clearance Under:	0' 0"	61 Channel Protection Cond.:	8-Equal to present desirable criteria.
216B Bridge Height:	38.5	*228 Minimum Vertical Clearance		68 Deck Geometry:	9
222 Slope Protection:	1	228A Actual Odometer Direction:	99'99"	69 UnderClr. Horz/Vert:	N
221A Spur Dike Rear:		228B Actual Opposing Direction:	99'99"	72 Approach Alignment:	8-No reduction of vehicle operating speed
221B Spur Dike Fwd:		228C Posted Odometer Direction:	00'00"	62 Culvert:	required. N - Not Applicable
219 Fender System:	0- None.	228D Posted Opposing Direction:	00'00"	70 Bridge Posting Required:	5. Equal to or above legal loads
220 Dolphin:		55A Lateral Underclearance Reference:	N- Feature not a highway or railroad.	41 Struct Open, Posted, CL:	A. Open, no restriction
223A Culvert Cover:	000	55B Lateral Underclearance on Right:	0.0	* 103 Temporary Structure:	No
223B Culvert Type:	0- Not Applicable	56 Lateral Underclearance on Left:	0.0	232 Posted Loads	
223C Number of Barrels:	0	10A Direction of Travel for Max Min:	0	232A H-Modified:	00
223D Barrel Width:	0.0	10B Max Min Vertical Clearance:	99'99"	232B Type3/Tandem:	00
223E Barrel Height:	0.0	245A Deck Thickness Main:	7.0	232C Timber:	00
223F Culvert Length:	0.0	245B Deck Thickness Approach:	0.0	232D HS-Modified:	00
223G Culvert Apron:	0	246 Overlay Thickness:	0	232E Type 3s2:	00
39 Navigation Vertical Clearance:	0'	•		232F Piggyback:	00
40 Navigation Horizontal Clearance:	0			253 Notification Date:	Feb-01-1901
116 Navigation Vertical Clear Closed:	0			258 Federal Notify Date:	Feb-01-1901
-				•	



MS4 Concept Report Summary

Attach the following checklist information to the Concept Report Template:

ere a Project Level Exclusion that applies to this project: ⊠ No
Roadways that are not owned or operated (maintained) by GDOT may not require post-construction BMP Coordinate with the appropriate local government or entity to determine stormwater management requirements.
The project location is not within a designated MS4 area.
Maintenance and safety improvement projects whereby the sites are not connected and disturbs less that one acre at each individual site. This includes projects such as repaving, shoulder building, fiber optic line installation, sign addition, and sound barrier installation.
Projects that have their environmental documents approved or right-of-way plans submitted for approval or before June 30th, 2012.
Road projects that disturb less than 1 acre or for site development projects that add less than 5,000 ft² of impervious area.

Drainage Area Summary									
							Water	Channel	Required
							Quality	Protection	Detention
	Pre-Development			Post-Development			Volume	Volume	Volume
Outfall		Weighted	Area		Weighted	Area	(Cubic	(Cubic	(Cubic
Area	Тс	CN	(Acres)	Тс	CN	(Acres)	Feet)	Feet)	Feet)
Α	.82	61	120.97	.82	61	120.97	431	144,150	132,231
В	.28	74	41.11	.28	74	41.18	265	115,107	65,110
С	.82	60	63.89	.37	83	20.06	1,345	84,147	0
D	.10	98	.91	.10	98	1.01	0	N/A	N/A
Е	.10	98	.79	.10	98	.89	0	N/A	N/A
F	N/A	N/A	N/A	.79	60	45.89	12,306	50,537	N/A

BMP Selection and Feasibility Summary							
	Outfa	all Level Exclusion?		Is the BMP Feasible?			
	Y/N	Exclusion No.	BMP Selected	Y/N	Infeasibility Criteria No.	¹ Feasibility of an Infiltration BMP	
Outfall Area							
Α	Υ	6	N/A				
В	Υ	6	N/A				
С	N	N/A	N/A	N	5		
D	Υ	6	N/A				
E	Υ	6	N/A				
F	N		Bioretention Basin	Υ		Appropriate	

^{1 -} For outfall areas considering an infiltration BMP indicate if an infiltration BMP is well-suited, potentially suitable, has limited suitability, or is unsuitable for the outfall area.

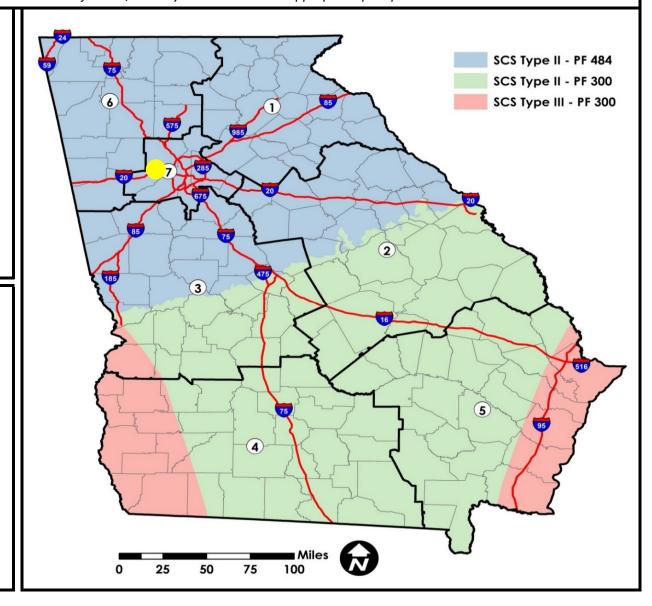
In addition to the above charts, attach the Drainage Area Map, drainage basin summary spreadsheets, and cost estimates (if required) to the Concept Report. For outfall areas considering an infiltration BMP, attach Worksheet J-1. See Appendix J of the GDOT Drainage Design for Highways Manual (Drainage Manual).

MS4 CONCEPT RE	PORT SUMMARY		GDQT Cecigia Department of Transportation				
GDOT PI Number: Project Name: Coordinates: County: GDOT District: HSGs: Notes:	0013733 SR 5/US 78 @ SR 6/US 278 - CFI 33.7968 -84.6443 Douglas County, GA District 7 A B C D	Submittal Date: Project Let Date: Agency/Company: Contact Person: Contact Phone:	MM/DD/YYYY 4/15/2023 GDOT Lily Hardman (404) 631-1676				
Milestone Submittal:	Milestone Submittal: ✓ Concept ☐ PFPR ☐ FFPR ☐ Addendum						
MS4 Post-Construction Exclusions Is there a Project Level Exclusion (PLE) that applies to this project? Yes Yes No							
Discharge Information Y N Does the pro	n oject discharge to a trout strear	n?					

Disclaimer: This tool provided for information only and is intended to assist the designer in filling out Georgia Department of Transportation's MS4 Post-Construction Stormwater Report. This tool is being provided without warranty or liability of any kind to the Department. All liability resides with the user of the tool. The Department's Manual on Drainage Design for Highways shall be used in design of post-construction structures.

The location auto-populates based on information entered in the Project tab. Review the map and select the appropriate SCS peaking factor. Click on the NOAA Atlas 14 button to be redirected to the NOAA reference, where you can obtain the appropriate precipitation data to be entered here.

Coordinates:	33.7968 -84.6443
County:	Douglas County, GA
GDOT District:	District 7
SCS Distribution Type:	Type II
Peaking Factor:	484
P _{1-yr, 24-hr} (in.):	3.45
P _{2-yr, 24-hr} (in.):	3.93
P _{10-yr, 24-hr} (in.):	5.42
P _{25-yr, 24-hr} (in.):	6.40
P _{50-yr, 24-hr} (in.):	7.17
P _{100-yr, 24-hr} (in.):	7.97
	NOAA ATLAS 14
	NOAA ATLAS 14



Concept

13733 SR 5/US 78 @ SR 6/US 278 - CFI

Attachment B: Post-Construction BMP Summary

		Drainage Area Cha	aracteristics			Арр	olicable	MS4 Re	quirements			PI	anning Considerat	ions			Location and Ider	ntification	
Outfall Area (Drainage Basin)	Drainage Basin Name	Receiving Water	Impaired (Yes or No)	Impairment	Approved TMDL (Yes or No)	OLE (Yes/ No) (see Note 1)	RRv (✔ or X)	WQv (✓ or X)	CP _v (✓ Q _{p25} (✓ or X)	Q _f (✓ or X)	Infeasible BMP(s)	Applicable Infeasibility (see Note 2)	Feasible (Selected) BMP(s)	Stormwater BMP Infiltration Report? (Applicable BMP) (see Note 3)	BMP(s) required for commitments to another agency?	Station (Begin - End)	Offset (Left/ Right)	Plan Sheet	Maintenance Responsibility
DA_1 C	Outfall A	Sweetwater Creek	Yes	FC	Yes	Yes (OLE 6)	✓	✓	✓	✓								21-0001	
DA_2 C	Outfall B	Sweetwater Creek	Yes	FC	Yes	Yes (OLE 6)	✓	√	✓ ✓	✓								21-0001	
DA_3 C	Outfall C	Sweetwater Creek	Yes	FC	Yes	No	✓	✓	√ x	×	DS,WS,GC,IT,SF,	5,5,5,5,5,5,5,5,5,5						21-0001	
		Sweetwater Creek	Yes	FC	Yes	Yes (OLE 6)	✓	✓	✓ ✓	✓								21-0001	
	Outfall E	Sweetwater Creek	Yes	FC	Yes	Yes (OLE 6)	✓	✓	✓ ✓									21-0001	
DA_6 C	Outfall F	Sweetwater Creek	Yes	FC	Yes	No	✓	✓	✓ ✓	✓			BB			210+50 - 213+00	Right	21-0001	
-																			
								 											
 																			
I																			
I										1									
[
[\vdash		-									
								 											
																	_		
										-									
								\vdash		-									
						<u> </u>	<u> </u>	<u> </u>						1	<u> </u>				

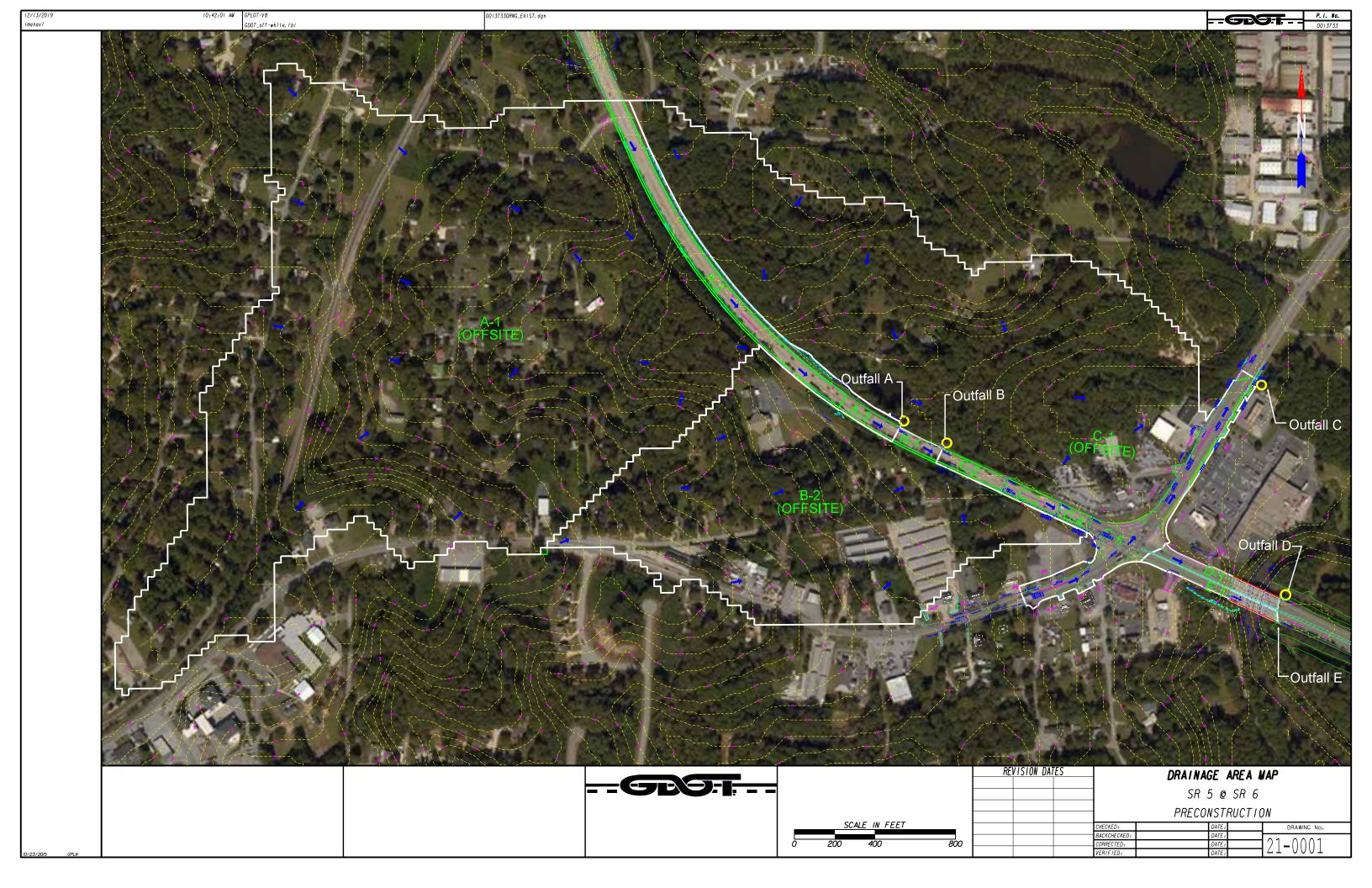
Note 1: If an Outfall Level Exclusion is claimed, include the exclusion number (as listed in the Post-Construction Stormwater Guidance section of the PCSR template) and provide supporting evidence in Attachment C.

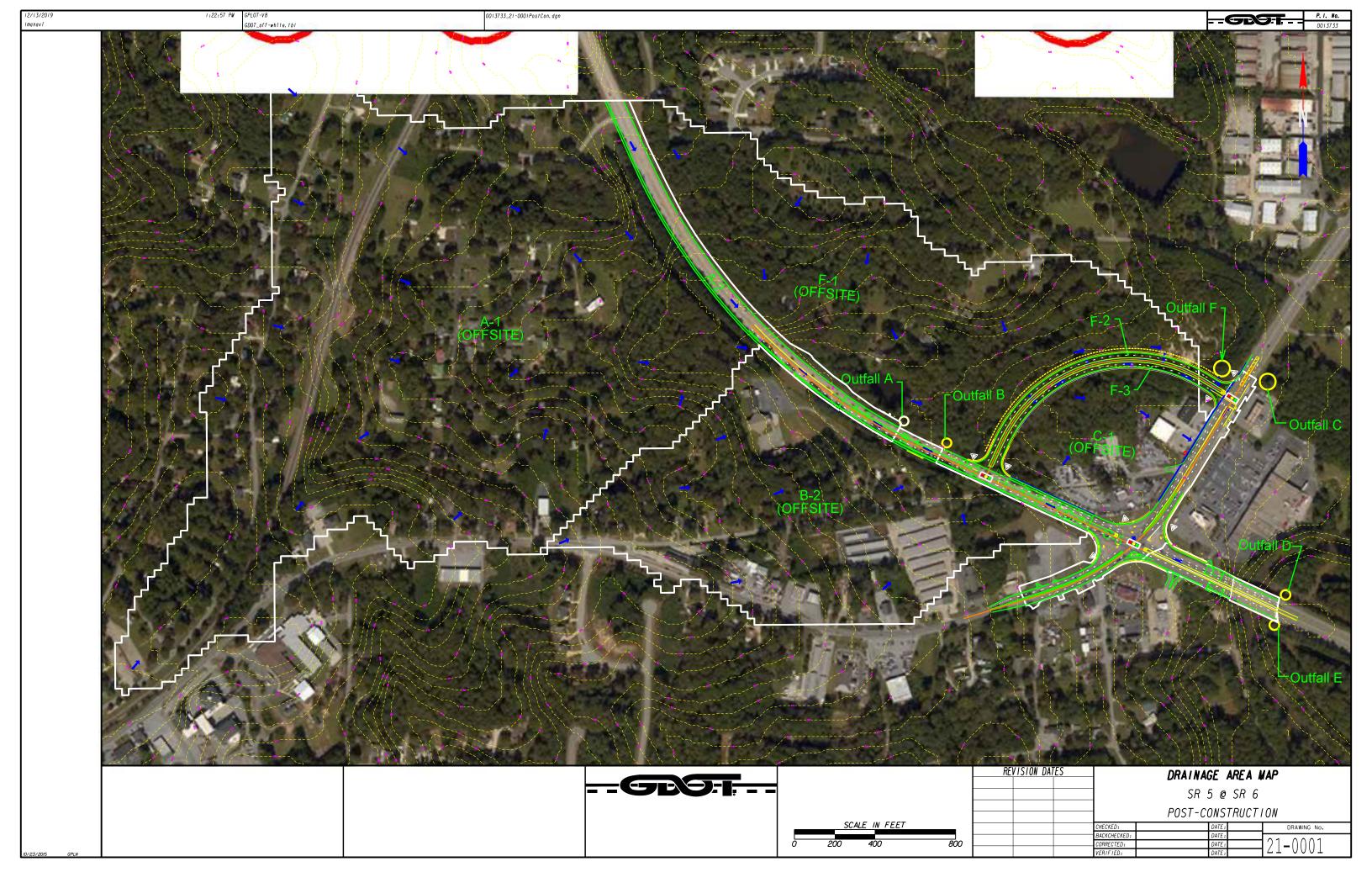
Note 2: If a BMP is identifed as infeasible, include the infeasibility number (as listed in the Post-Construction Stormwater Report Guidance section of the PCSR template) and provide supporting evidence in Attachment C.

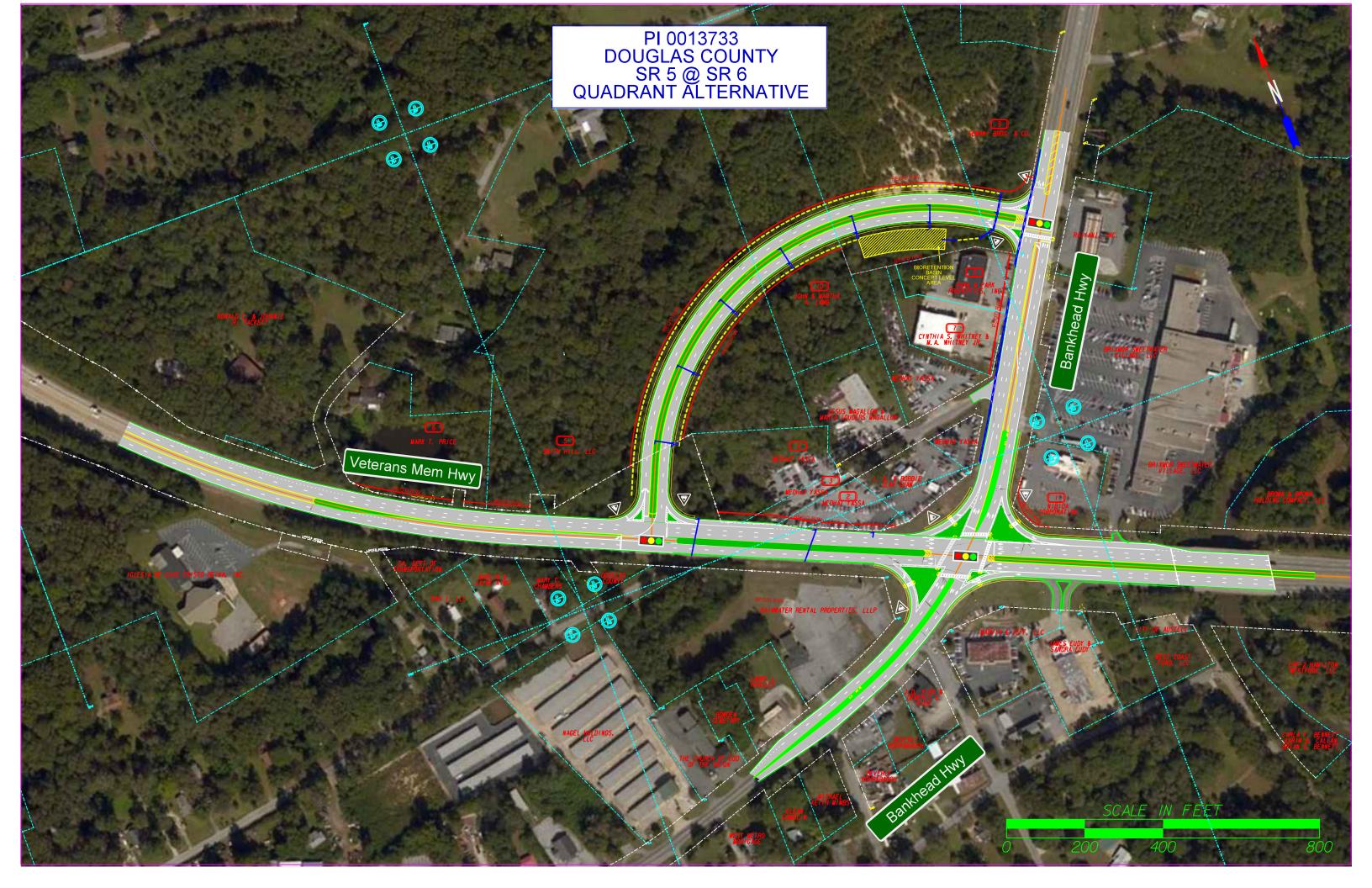
Note 3: See Appendix J of the GDOT Drainage Design for Highways Manual for guidance on infiltration testing and the Stormwater BMP Infiltration Report.

Attachment B-1: Pre- versus Post- Development Drainage Area Summary

Outfall	Pre	-Developm	ent	Pos	t-Developm	nent		Peak Flow Rate Runoff Volumes							
Area	Overall			Overall			1-Yr		-Yr)-Yr	25	-Yr)-Yr
(Drainage Basin)	Drainage Area (ac)	Curve Number	Tc (min)	Drainage Area (ac)	Curve Number	Tc (min)	Post (cfs)		Post (cfs)						Post (cuft)
DA_1	120.97	61	48.9	120.97	61	48.9	29.4	158.3	158.3	247.1	247.1	1,000,175	1,000,183	1,502,537	1,502,549
DA_2	41.11	74	16.5	41.18	74	16.5	50.4	158	158	223	223	525,877	526,741	731,036	732,237
DA_3	63.89	60	48.9	20.06	83	22.3	34.4	106	88	167	119	507,391	325,094	767,819	433,219
DA_4	0.91	98	6	1.01	98	6	5.3	9	10	11	13	20,302	22,538	25,471	28,277
DA_5	0.79	98	6	0.89	97	6	4.5	8	9	10	11	17,613	19,546	22,098	24,615
DA_6	0.00		0	45.89	60	47.3	10.1		58		92		364,427		551,476
-															







	Phas	Worksheet J-1					
Outfall Basin I	Name:	Outfall F					
Category		Parameter	Yes	No	Not Sure	Data Source / Reference ¹	Comments / Justification
Part 1 – Estima	ated Infil	tration Rate					
in/hr (3.5x10-4 c	m/s)? If a an infiltra	on rate reliably greater than 0.5 answer is "No", the site is tion BMP. If answer is "Yes",	X			NRCS soil survey Section 4.4.2	
Part 2 - Potent	ial Infea	sibility Criteria for Infiltration BMF	Ps				
	BMP di	rainage area more than 5 acres?		Х			
		uous flow of groundwater or water her source to BMP?		Х			
	Less th	an 10 feet from property line?		Х			
	Less th	an 100 feet from private well?		Х		USGS Well Records Information	
Drainage Manual Chapter	Less th supply	an 1,200 feet from public water well?		X		USGS Well Records Information	
10.4.4 Criteria		an 100 feet from septic system ach field?		Х			
	Less th	an 100 feet from surface waters?		Х			
		an 400 feet from surface drinking ource (non-tributary)?		Х			
		an 100 feet from surface drinking ource (tributary)?		Х			
	Bedroc	k at shallow depth?		Х		NRCS soil survey	
Geologic	Karst c	onditions?		Х		Figure 3-1	

12/2016 Page **1** of **4**

	Phase 1 Screening Assessmen	t of Storm	water Inf	iltration Fe	easibility	Worksheet J-1
Outfall Basin I	lame: Outfall F					
Category	Parameter	Yes	No	Not Sure	Data Source / Reference ¹	Comments / Justification
	Potential for acid-producing rock?		Х		Figure 3-2	
Geologic	Landslide prone area?		Х		Figure 3-3	
0 "	Potentially expansive soils present?		Х		Figure 3-4	
Soils	Liquefiable soils?		Х		NRCS soil survey	
	Non-coastal areas: Less than 4 feet distance between GWT and BMP bottom elevation?	1	X		NRCS soil survey	
Groundwater	Coastal areas: Less than 2 feet distance between GWT and BMP bottom elevation?		Х		NRCS soil survey	
	BMP in a groundwater/aquifer recharge area?		Х		Figure 3-5	
	Near brownfield site?		Х		GA EPD Brownfields	
Environmental	Near hazardous site?		Х		GA EPD Hazardous Site Inventory	
	Near existing underground storage tank (UST) or leaking underground storage tank (LUST) site?		Х		GA EPD USTs	
	Within 20 feet of structure foundation (bridge, retaining wall, building, etc.)?		Х			
Structural	Less than 100 feet upgradient of structur foundation?	е	Х			
	Potential to affect buried utilities?		Х			
	Subsurface drainage toward subbase or impervious paved area of roadway?		Х			
Topographic	Preconstruction slopes greater than 6%?	,	Х			

12/2016 Page **2** of **4**

Phas	se 1 Screening Assessment	of Storm	water Inf	iltration Fe	easibility	Worksheet J-1
Name:	Outfall F					
	Parameter	Yes	No	Not Sure	Data Source / Reference ¹	Comments / Justification
			Х			
			X			
BMP c	on or near fill soil section?		X			
of "Yes' tal towar	'l"No"/"Don't Know" Responses 'ds infiltration suitability		29			
usions						
onal, site ntify infil	e specific assessment will be tration rates.)	Yes				
Is the basin potentially suitable for infiltration? This classification occurs if suitability cannot be fully assessed at this time due to limited information. Instances that may warrant this classification include: • Unsuitable characteristics (refer to Section 3.2) absent from the site and/or limited to relatively small areas • Variable soil conditions that require further investigation • Unspecified site grading plans						
	BMP of propose Less the between BMP of the second s	Parameter BMP footprint near crest or toe of proposed slope steeper than 4H:1V? Less than 1 foot elevation difference between inflow and outflow locations? BMP on or near fill soil section? mg Results: of "Yes"/"No"/"Don't Know" Responses tal towards infiltration suitability towards infiltration suitability usions table for infiltration based on the level of onal, site specific assessment will be ntify infiltration rates.) e if all answers above are "No". tentially suitable for infiltration? n occurs if suitability cannot be fully assessed at mited information. Instances that may warrant include: characteristics (refer to Section 3.2) absent from /or limited to relatively small areas il conditions that require further investigation	Parameter Parameter Parameter Substituting the substitution of	Parameter No Substitution of the section of proposed slope steeper than 4H:1V? Less than 1 foot elevation difference between inflow and outflow locations? BMP on or near fill soil section? X Ing Results: Ing Parameter Ing Results:	Name: Outfall F Parameter Yes No Not Sure BMP footprint near crest or toe of proposed slope steeper than 4H:1V? Less than 1 foot elevation difference between inflow and outflow locations? BMP on or near fill soil section? X Ing Results: Of "Yes"/"No"/"Don't Know" Responses tal towards infiltration suitability towards infiltration suitability usions Itable for infiltration based on the level of onal, site specific assessment will be nitify infiltration rates.) Itentially suitable for infiltration? In occurs if suitability cannot be fully assessed at mited information. Instances that may warrant include: Characteristics (refer to Section 3.2) absent from for limited to relatively small areas in conditions that require further investigation	Parameter Parameter Parameter BMP footprint near crest or toe of proposed slope steeper than 4H:1V? Less than 1 foot elevation difference between inflow and outflow locations? BMP on or near fill soil section? RMP on or near fill soil section? The second of the second outflow of the second outflow locations? Parameter X Substitute of "Yes"/"No"/"Don't Know" Responses tall towards infiltration suitability towards infiltration suitability Susions Table for infiltration based on the level of onal, site specific assessment will be notify infiltration rates.) Bentially suitable for infiltration? The occurs if suitability cannot be fully assessed at mited information. Instances that may warrant include: Characteristics (refer to Section 3.2) absent from /or limited to relatively small areas it conditions that require further investigation

12/2016 Page **3** of **4**

	Phas	se 1 Screening Assessment o	f Storm	water Inf	iltration Fe	easibility	Worksheet J-1		
Outfall Basin N	Name:	Outfall F							
Category		Parameter	Yes	No	Not Sure	Data Source / Reference ¹	Comments / Justification		
This classification required to deline may warrant this of a Section 3.2). at some loca improvement	occurs if ate poter classifica a site may . For exa ations and ons for sit its at the infiltratio	f a more detailed investigation will be ntially suitable areas. Instances that tion include: y feature unsuitable characteristics (see ample, a site may include suitable soils d unsuitable soil types at others. ting BMPs. For example, the proposed site may not provide adequate space to on BMP of the size required to handle		No					
 0.5 in/hr The infiltration increases the environment acceptable in the infiltration. The infiltration in the infiltration. 	occurs it occurs it on rate can rate is erisk of gatal impacted on BMP con BMP con control occurs in the control of the control occurs in the control occu			No					

12/2016 Page **4** of **4**





Interoffice Memo

FILE: PI No. 0013733, Douglas County

DATE: May 22, 2020

FROM: Monica L. Flournoy, P.E., State Materials Engineer

TO: Kimberly Nesbitt, State Program Delivery Administrator

Attn: Davida White, Project Manager

SUBJECT: SR 5/US 78 @ SR 6/US 278 - CFI

The Pavement Management Branch (PMB) of the Office of Materials and Testing (OMAT) has completed the Initial Pavement Evaluation Summary Report for the above project. The Project Manager should forward copies of this report to the appropriate Office(s).

If additional information is needed, please contact Phillip Snider of the PMB at 404-608-4778, 404-608-4770 (Main), or Ian Rish at 404-608-4849.

PAGES	DESCRIPTION
6	Initial Pavement Evaluation Summary
9	Appendix A: Initial Pavement Designs
5	Appendix B: Project Plan Location
8	Appendix C: Traffic Data
11	Appendix D: COPACES Data
30	Appendix E: Historic Plans
18	Appendix F: Visual Distress Photos

MLF:JTR:IDR:EUU:PES

1 Project Description

1.1 Introduction

At the request of the GDOT Office of Program Delivery, the Pavement Management Branch of the Office of Materials and Testing (OMAT) reviewed the suitability of the existing pavement to be retained for the proposed project. This Initial Pavement Evaluation Summary (IPES) report includes initial pavement design recommendations as a response to this request.

1.2 Purpose and Location

Project Identification (PI) Number (No.) 0013733 is located in Douglas County (see Appendix B for location map) and is an intersection improvement project. The project purpose is to improve operations at the intersection of State Route (SR) 5 and SR 6 in Lithia Springs, Douglas County. SR 6 is described as having a Level of Service (LOS) of 'F' and SR 5 is described as having a LOS of 'E'.

The project proposes to convert the intersection to a Continuous Flow Intersection (CFI). A concept report has not yet been approved and alternative layouts have not been finalized. The layout included in the request for this IPES included a quadrant connector between the east leg of SR 5 and the north leg of SR 6, widening, and lane shifts.

1.3 Prioritization

SR 6 is categorized as a High priority route. SR 5 is categorized as a Critical priority route west of the intersection with SR 6 and High east of the intersection. State route priorities can be found on the <u>State Route Prioritization Map</u>. The underdesign percentages should follow the guidelines set forth in the <u>Revised Flexible Pavement Underdesign Policy Based on State Route Prioritization</u>. All full depth flexible pavement designs for routes categorized as Critical or High shall have an underdesign target of 5%.

2 Project Data

2.1 Soil Survey Summary

A Soil Survey Summary was not available for this project. Therefore, the default Soil Support Value of 2.5 for Douglas County were used in development of the pavement designs. <u>Graded Aggregate Base (GAB)</u> is the only base type which is typically allowed in this area. If a Soil Survey Summary is completed at a later date, these designs should be re-evaluated.

2.2 Regional Factor

The Regional Factor (RF) for Douglas County is 1.8.

2.3 Traffic

The Project Manager provided traffic diagrams that were approved by the GDOT Office of Planning on August 6, 2018 (see Appendix C for traffic data). The highest one-way combination of AADT and 24-hour truck percentage was used for the design analyses for this project. The data used in the pavement designs is summarized in Table 1.

	Table 1: Traffic Data									
Years	Route	Lanes	1-way ADT	1-way ADT	24-HR Truck %	SU Truck %				
2028-2048	SR 5	2	10,725	13,075	11.0	9.0				
2030-2040	SR 5	2	11,175	14,125	11.0	9.0				
2028-2048	SR 6	2	22,150	27, 025	18.0	12.0				
2030-2050	SR 6	2	23,150	29,400	18.0	12.0				
2028-2048	Quadrant	1	1,675*	2,050*	18.0	12.0				
2030-2050	Quadrant	1	1,750*	2,225*	18.0	12.0				

^{*}SR 6 SB to SR 5 WB Turn Counts

2.4 Lane Distribution Factor

The Lane Distribution Factor (LDF) is used to determine the amount of 18-kip Equivalent Single Axle Loads (ESALs) in the design lane. Typically, as the number of lanes increase, the LDF will decrease. The recommended LDF values can be found in Table 7.2 of the GDOT Pavement Design Manual. The LDF used for SR 5 and SR 6 is 80%.

3 Historic Information

3.1 COPACES (Computerized Pavement Condition Evaluation System)

The GDOT Maintenance Office conducts pavement condition surveys on routes that are maintained by GDOT. The COPACES ratings from these surveys are based on a visual survey of surface distresses of the existing pavement.

In 2015, the latest average rating for SR 6 from Milepost (MP) 0 to MP 1 in Douglas County was 78. SR 6 was resurfaced shortly after this survey and another has not been performed at this location since. The overall pavement condition was noted as "fair". The rating showed significant level 2 (50%) block cracking, an average of 1/8 inch rutting, and some potholes.

In 2017, the average COPACES rating for SR 5 from MP 23 to MP 24 in Douglas County was 86. The overall pavement condition was noted as "fair". The rating showed limited level 2 (2%) load cracking, some level 1 (10%) block cracking, and some level 2 (12%) reflective cracking.

These COPACES surveys were performed by the Area 3 Maintenance Office of District 7. The distresses listed in the COPACES information are not consistent with those observed during the field investigation. The observed distresses on SR 5 were similar in type and severity, but more extensive. The SR 6 COPACES survey is not current since the road has been resurfaced since the survey was last performed. COPACES data can be found in Appendix D.

3.2 SR 5: Previous Projects

Historic plans can be found in Appendix E.

3.2.1 PI M003751

SR 5 was resurfaced from Curley Road in Douglasville to the Cobb County line in 2009. Work consisted of milling 1.5 inches and inlaying 165 lbs/SY of 12.5 mm Superpave with polymer-modified asphalt.

3.2.2 PI 721120-

SR 5 was reconstructed from Peachtree Street, approximately 400 feet east of the intersection, to the Cobb County line in 1991. Work consisted of paving with 1.5 inches of

Mix 'E', 2 inches of mix 'B', 5 inches of AC Base and 12 inches of GAB. Shoulders were placed as 8"x30" curb and gutter.

3.2.3 PI H003079

SR 5 was widened and overlaid from the Alabama state line to downtown Austell in 1961. Shoulders were widened two feet on each side with 8 inches of cement stabilized GAB. The existing concrete pavement and newly placed GAB shoulders were then overlaid with leveling, asphalt cement surface treatment and 165 lbs/SY mix 'E'.

3.2.4 PI H014018

SR 5 appears to have been originally constructed from the Douglasville city limits to the Austell city limits in 1930 or 1931. Paving consisted of 6 inches of jointed concrete pavement on subgrade with 50-foot doweled joints.

3.2.5 Miscellaneous

COPACES rating and the M003751 project description suggest that work was done on SR 5 in 1999, however records for this activity could not be located at this time.

3.3 SR 6: Previous Projects

Historic plans can be found in Appendix E.

3.3.1 PI M004638

SR 6 was resurfaced from the Fulton County line to the intersection at SR 5 in 2015. The work consisted of milling 1.5 inches and inlaying with 1.5 inches of 12.5 mm Superpave with polymer-modified asphalt.

3.3.2 PI M003158

SR 6 was reconstructed from approximately 200 feet north of the intersection at SR 5 to approximately 0.8 miles north of Hill Road in Cobb County in 2006. Paving consisted of 12 inches of continuously reinforced concrete, 330 lbs/SY of 19 mm superpave and 12 inches of GAB. A flush median was also constructed using 7 inches of roller-compacted concrete on 20 inches of GAB.

3.3.3 PI 721130-

SR 6 was widened and overlaid from I-20 to SR 5 in 1990. Widening consisted of 1.5 inches of mix 'E', 2 inches of mix 'B', 6 inches of asphalt base and 12 inches of GAB on each side with varying width. Mix 'E' also extended to cover the existing pavement. A 6-inch raised concrete median was also constructed.

3.3.4 PI 72046B-

SR 6 was originally constructed from SR 5 to north of Garrett Road in 1984. Paving consisted of 8 inches of jointed concrete pavement with dowels on 6 inches of GAB. An asphalt flush median was constructed with 1.25 inches mix 'F', 2.75 inches mix 'B' and 10 inches GAB.

3.3.5 PI 761780-

SR 6 was widened and overlaid from I-20 to SR 5 in 1979. Widened sections consisted of 60 lbs/SY mix 'D', 2 inches mix 'B-modified', 6 inches mix 'A' and 8 inches GAB. Overlay of the existing pavement consisted of 2 inches mix 'B-modified' and leveling. Mix 'D' also extended over the overlaid section. The new pavement appears to have been primarily in the current southbound direction.

3.3.6 Miscellaneous

Plans for the original construction of SR 6/Thornton Road from I-20 to SR 5/SR 8 could not be located at this time. Also, COPACES ratings and the project description of M004638 suggest that SR 6 was resurfaced in 2000.

4 Field Data

4.1 Distress Survey

Personnel from the Pavement Management Branch conducted a field investigation on April 24, 2020. The investigator visually observed and photographed pavement distresses. The investigator noted predominantly block cracking on SR 5 within the project. Past COPACES surveys suggest that some of this cracking may be reflective, however cores would be needed to verify. Also, some rutting was noticed near the stop bar on the east leg in the westbound direction. Near the west end of the project the block cracking is of a higher severity and high severity load cracking also becomes visible.

The asphalt portion of SR 6 within the project appeared to be in good condition except for some localized distresses. Distresses include potholes, block cracking in the northbound right turn lane, rutting at the stop bars, and joint spalling and shoving at the joint with the concrete pavement just north of the intersection. Rutting and potholes may be the result of stripped 'B-modified' in the pavement, but cores would be required to verify. Cores will also be needed to verify if any block cracking is reflective.

The concrete portion of SR 6 appears to be in good condition with only the frequent, tight, transverse cracks typical of CRCP.

Example pavement surface condition photographs are included in Appendix F.

4.2 Ground Penetrating Radar (GPR)

GPR was not used during the field investigation of this project and therefore no GPR data is included in this report.

4.3 Falling Weight Deflectometer (FWD)

FWD was not used during the field investigation of this project and therefore no FWD data is included in this report.

4.4 Cores

Because this is IPES is a preliminary report, cores were not taken from this project at this time. If a complete PES is requested in the future, cores will be taken at that time.

4.5 Recommendations

SR 5 to the east of the intersection appears suitable for retention. However, cores would be needed to verify this recommendation.

SR 5 to the west of the intersection appears suitable to retain up to the existing construction joint. Past this joint distress severity and frequency increase significantly which includes level 3 block/load cracking. This pavement is not suitable to be retained and should be replaced.

Aside from the northbound right turn lane and localized distresses, SR 6 appears suitable to be retained. However, historic data showing 'B-modified' in the pavement structure is concerning. Cores will be needed to verify the integrity of the asphalt layers. If stripped asphalt is located within the pavement, the affected material should be removed in its entirety.

The concrete pavement on the northern leg of SR 6 was constructed in 2006 and appears to be in good condition. This segment does not appear to need any major rehabilitation. However, it should be closely examined at the time of construction for spalling or pop-outs and approximately 15 square yards (0.1%) of Type 1 concrete patching (451-1105) set aside for any potential repairs.

4.6 Full Depth Sections

The following full-depth flexible pavement structure is recommended for the potential reconstruction or widening of SR 5 from approximately 800 feet south of the intersection to approximately 1150 feet north of the intersection.

	Table 2: Full-Depth Flexible Pavement Section SR 5									
Pay Item Number	Material	Course	Thickness	Spread Rate						
402-4510	12.5 mm Superpave, GP 2 only, Poly-Mod & H. Lime	Surface	1.5 inches	165 lbs/yd²						
402-3190	19 mm Superpave, GP 1 or 2 & H. Lime	Binder	2 inches	220 lbs/yd²						
402-3121	25 mm Superpave, GP 1 or 2, & H. Lime	Asphalt Base	7 inches	770 lbs/yd²						
310-1101	Graded Aggregate Base	Base	12 inches	N/A						

The following full-depth flexible pavement structure is recommended for the proposed reconstruction or widening of SR 6 from the concrete pavement joint to the Sweetwater Creek bridge.

	Table 3: Full-Depth Flexible Pavement Section SR 6									
Pay Item Number	Material	Course	Thickness	Spread Rate						
402-4510	12.5 mm Superpave, GP 2 only, Poly-Mod & H. Lime	Surface	1.5 inches	165 lbs/yd²						
402-3190	19 mm Superpave, GP 1 or 2 & H. Lime	Binder	2 inches	220 lbs/yd²						
402-3121	25 mm Superpave, GP 1 or 2, & H. Lime	Asphalt Base	11 inches	1210 lbs/yd ²						
310-1101	Graded Aggregate Base	Base	12 inches	N/A						

The following full-depth flexible pavement structure is recommended for the proposed new construction of the quadrant connector from SR 5 to SR 6.

	Table 4: Full-Depth Flexible Pavement Section Quadrant Connector									
Pay Item Number	Material	Course	Thickness	Spread Rate						
402-3103	9.5 MM Superpave, TYPE II, GP 2 Only, & H. Lime	Surface	1.25 inches	135 lbs/yd²						

Table 4: Full-Depth Flexible Pavement Section Quadrant Connector									
Pay Item Number	Material Course Inickness Spread								
402-3190	19 mm Superpave, GP 1 or 2 & H. Lime	Binder	2 inches	220 lbs/yd ²					
402-3121	25 mm Superpave, GP 1 or 2, & H. Lime	Asphalt Base	5 inches	550 lbs/yd ²					
310-1101	Graded Aggregate Base	Base	12 inches	N/A					

The following full-depth rigid pavement structure on Table 5 is an alternative for the potential reconstruction of SR 6. Rigid pavement should be considered at this location due to the potential for rutting at intersections and this segment being located between a bridge and existing concrete pavement.

Table 5: Full Depth Rigid Pavement Section SR 6									
Pay Item Number	Material	Course	Thickness	Spread Rate					
439-0026	Plain PC Concrete Pavement (Class III)	Surface	12 inches	N/A					
310-1101	Graded Aggregate Base	Base	8 inches	N/A					

Design analyses can be found in Appendix A.

4.7 Overlay Sections

Because the existing structure has not been verified, overlay designs are not included in this IPES. Mill and Inlay/Overlay recommendations may be included in a complete PES.

5 Other Information

- The use of asphalt mixes recommended in this report meet the <u>Criteria for Use of Asphaltic Concrete Layer and Mix Types</u> established on January 19, 2018.
- Pavement designs are preliminary and subject to change.
- An IPES is for concept use only and a final PES is required in order to retain the pavement where a PES is required per the PDP 6.3.4

Author: Phillip Snider

Reviewer: Ian Rish, P.E.

Appendix A: Pavement Designs

Flexible Pavement Design Analysis							
PI Number	0013733	Douglas					
Project Number	N/A	Design Name	SR 5 Base through				
Project Description	Intersection Improvement - Prel	Intersection Improvement - Preliminary Design					

	T	Miscellaneous Data	a				
Initial Design Year	Initial Design Year2028Initial AADT, VPD10,72524 Hour Truck %11.00						2
Final Design Year	2048	Final AADT, VPD	13,075	SU Truck %	9.00	Curb & Gutter/Barrier	Yes
		Mean AADT, VPD	11,900	MU Truck %	2.00		

Design Data								
Lane Distribution Factor (%) 80.00		Soil Support Value	2.50	Single Unit ESAL	0.40			
Terminal Serviceability Index 2.50		Regional Factor	1.80	Multiple Unit ESAL	1.50			
			User Defined 18-KIP ESAL	0.00	Calculated 18-KIP ESAL	0.60		
Non-Standard Value Comment	No SSS; defau	lt values us	ed					

Design Loading (Calculated 18-KIP ESAL)								
Mean AADT, VPD	LDF (%)	Vehicle Type	Volume (%)	ESAL Factor	Daily ESAL			
11,900	80.00	Single Unit Truck	9.00	0.40	343			
11,900		Multi Unit Truck	2.00	1.50	286			
	Total Daily ESALs							
	4,591,700							

Proposed Flexible Full Depth Pavement Structure								
Course		Material	Thickness (inches)	Structural Coefficient	Structural Value			
Course 1	12.5 mm Superpar	ve, Polymer Modified	1.50	0.4400	0.66			
Course 2	19 mm Superpave		2.00	0.4400	0.88			
Course 2	ourse 3 25 mm Superpave		1.00	0.4400	0.44			
Course 3			6.00	0.3000	1.80			
Course 4	Graded Aggregate Base		12.00	0.1600	1.92			
Required SN 5.72		Proposed pavement is 0.38% Und	Proposed pavement is 0.38% Underdesigned		5.70			

Design Remarks	Widening/Turn Lanes	

Prepared By		4/30/2020 11:15 AM
	Phillip Snider	Date
Recommended By		
	State Roadway Design Engineer	Date
Approved By		
	State Pavement Engineer	Date

Flexible Pavement Design Analysis								
PI Number	PI Number 0013733 County(s) Douglas							
Project Number	N/A	Design Name	SR 6 Base Through					
Project Description	Intersection Improvement - Preliminary Design							

	Miscellaneous Data	a					
Initial Design Year	Initial Design Year2028Initial AADT, VPD22,15024 Hour Truck %18.00						2
Final Design Year	2048	Final AADT, VPD	27,025	SU Truck %	12.00	Curb & Gutter/Barrier	Yes
		Mean AADT, VPD	24,588	MU Truck %	6.00		

Design Data								
Lane Distribution Factor (%) 80.00		Soil Support Value	2.50	Single Unit ESAL	0.40			
Terminal Serviceability Index 2.50		Regional Factor	1.80	Multiple Unit ESAL	1.50			
			User Defined 18-KIP ESAL	0.00	Calculated 18-KIP ESAL	0.77		
Non-Standard Value Comment	No SSS; Defau	ılt values u	sed					

Design Loading (Calculated 18-KIP ESAL)							
Mean AADT, VPD LDF (%) Vehicle Type Volume (%) ESAL Factor Da							
24,588	80.00	Single Unit Truck	12.00	0.40	945		
24,366		Multi Unit Truck	6.00	1.50	1,771		
	Total Daily ESALs						
	Total Design Period ESALs						

Proposed Flexible Full Depth Pavement Structure							
Course		Material	Thickness (inches)	Structural Coefficient	Structural Value		
Course 1	12.5 mm Superpa	ve, Polymer Modified	1.50	0.4400	0.66		
Course 2	19 mm Superpave		2.00	0.4400	0.88		
Course 3	25 man Sumamaya		1.00	0.4400	0.44		
Course 3	25 mm Superpave		10.00	0.3000	3.00		
Course 4	Graded Aggregate Base		12.00	0.1600	1.92		
Required SN 6.93		Proposed pavement is 0.39% Und	Proposed pavement is 0.39% Underdesigned		6.90		

Design Remarks	Controlled by +2-year design
IXCIIIAI KS	

Prepared By		4/30/2020 11:15 AM
	Phillip Snider	Date
Recommended By		
	State Roadway Design Engineer	Date
Approved By		
	State Pavement Engineer	Date

Filename: c:\users\psnider\documents\projectwise\d3400991\0013733 Pavement Design.xlsm

Flexible Pavement Design Analysis							
PI Number	0013733 County(s) Douglas						
Project Number	N/A	N/A Design Name SR6@SR5 Quadrant					
Project Description	Intersection Improvement - Preli	Intersection Improvement - Preliminary Design					

Traffic Data (AADTs are one-way)						Miscellaneous Data	a
Initial Design Year	2028	18.00	Lanes in one direction	1			
Final Design Year	2048	Final AADT, VPD	2,050	SU Truck %	12.00	Curb & Gutter/Barrier	Yes
	<u> </u>		1,863	MU Truck %	6.00		

Design Data							
Lane Distribution Factor (%) 100.00		Soil Support Value	2.50	Single Unit ESAL	0.40		
Terminal Serviceability Index 2.50		Regional Factor	1.80	Multiple Unit ESAL	1.50		
			User Defined 18-KIP ESAL	0.00	Calculated 18-KIP ESAL	0.77	
Non-Standard Value Comment No SSS; Default values used			sed				

Design Loading (Calculated 18-KIP ESAL)								
Mean AADT, VPD LDF (%) Vehicle Type Volume (%) ESAL Factor Daily ESA								
1.962	100.00	Single Unit Truck	12.00	0.40	90			
1,863		Multi Unit Truck	6.00	1.50	168			
	Total Daily ESALs							
	Total Design Period ESALs							

Proposed Flexible Full Depth Pavement Structure							
Course		Material	Thickness (inches)	Structural Coefficient	Structural Value		
Course 1	9.5 mm Type II St	perpave	1.25	0.4400	0.55		
Course 2	19 mm Superpave		2.00	0.4400	0.88		
Course 3 25 mm Superpave			1.25	0.4400	0.55		
			3.75	0.3000	1.13		
Course 4	4 Graded Aggregate Base		12.00	0.1600	1.92		
Required SN 5.06 Proposed pavement is 0.79% Underdesigned		Proposed SN	5.03				

Design Remarks	Traffic Based on SR6 SB - SR 5 WB Turn Counts

Prepared By		5/7/2020 1:34 PM
	Phillip Snider	Date
Recommended By		
	State Roadway Design Engineer	Date
Approved By		
	State Pavement Engineer	Date

Rigid Pavement Design Analysis									
PI Number 0013733 County(s) Douglas									
Project Number	N/A	Design N	ame	SR 6Rigid Alt					
Project Description	Intersection Impro	ovement - Preli	minary Desig	n					
Section Location	*	* Type Section JPCP					JPCP		
Begin Section Station	*	End Secti	on Station		*	Section Length	*		

Traffic Data (AADTs are one-way)						Miscellaneous Data	a
Initial Design Year	2028	Initial AADT, VPD	22,150	24 Hour Truck %	18.00	Lanes in one direction	2
Final Design Year	2048	Final AADT, VPD	27,025	SU Truck %	12.00	Curb & Gutter/Barrier	Yes
		Mean AADT, VPD	24,588	MU Truck %	6.00	Interstate	No

Design Loading (Calculated 18-KIP ESAL)							
Mean AADT, VPD	LDF (%)	Vehicle Type	Volume (%)	ESAL Factor	Daily ESAL		
		Other Vehicles	82.00	0.004	65		
24,588	80	Single Unit Truck	12.00	0.500	1,181		
		Multi Unit Truck	6.00	2.680	3,164		
	Total Daily ESALs 4,4						
	Total Design Period ESALs 32,193,00						

Design Data												
Terminal Serviceability Index (Pt)			2.50	2.50 Working Stress (psi) 45		450	M	Modulus of Elasticity (psi)		3,200,000		
Soil Support Value	2.50	Subg	rade Moo	dulus ((k)	k) 110 Subbase Modulus (k₁) 15			155	Subbase Modulus (k _{eff}) 15		155
Trial Depth	Trial Depth of PCC Pavement (inches)				1	2.00	Calculated Stress from Equation (psi) 472.53					472.53
% O ₃	% Overstressed 5.01				% L	nderdesig	ned	4.77	Balance	ed Thickness (inc	hes)	12.31
Non-Standard Value Comment	No S	No SSS; Default values used										

Proposed Rigid Pavement Structure					
Material	Thickness (inches)				
JPCP - Jointed Portland Cement Concrete Pavement	12.00				
19 mm Superpave Asphaltic Concrete Interlayer	0.00				
Graded Aggregate Base	8.00				

JPCP - Dowel Bar Size and Spacing Refer to GDOT Standard 5046H: Joint Details for Portland Cement Concrete Paving

Design Remarks	12 inches typical maximum concrete pavement thickness	
Prepared By		5/4/2020 8:43 AM
	Phillip Snider	Date
Recommended I	By	
	State Roadway Design Engineer	Date
Approved By		
	State Pavement Engineer	Date

 $Filename: c: \label{lem:c:users} $$ c: \end{cases} Psnider \end{cases} Psnider \end{cases} ODOT Pavement Design Tool - Version 2.0$

Flexible Pavement Design Analysis								
PI Number	0013733	County(s)	Douglas					
Project Number	N/A	Design Name	SR 5 +2-Year Through					
Project Description	Intersection Improvement - Preli	Intersection Improvement - Preliminary Design						

	Miscellaneous Data	a					
Initial Design Year	2030	Initial AADT, VPD	11,175	24 Hour Truck %	11.00	Lanes in one direction	2
Final Design Year	2050	Final AADT, VPD	14,125	SU Truck %	9.00	Curb & Gutter/Barrier	Yes
		Mean AADT, VPD	12,650	MU Truck %	2.00		

Design Data							
Lane Distribution Fa	actor (%)	80.00	Soil Support Value	2.50	Single Unit ESAL	0.40	
Terminal Serviceabi	Terminal Serviceability Index 2.50		Regional Factor	1.80	Multiple Unit ESAL	1.50	
			User Defined 18-KIP ESAL	0.00	Calculated 18-KIP ESAL	0.60	
Non-Standard Value Comment	No SSS; defau	lt values us	ed				

Design Loading (Calculated 18-KIP ESAL)							
Mean AADT, VPD	LDF (%)	Vehicle Type	Volume (%)	ESAL Factor	Daily ESAL		
12,650	80.00	Single Unit Truck	9.00	0.40	365		
12,030		Multi Unit Truck	2.00	1.50	304		
	Total Daily ESALs 60						
	Total Design Period ESALs 4,883						

Proposed Flexible Full Depth Pavement Structure								
Course		Material	Thickness (inches)	Structural Coefficient	Structural Value			
Course 1	12.5 mm Superpar	ve, Polymer Modified	1.50	0.4400	0.66			
Course 2	19 mm Superpave		2.00	0.4400	0.88			
Course 3	0 2 25 0		1.00	0.4400	0.44			
Course 3	25 mm Superpave		6.00	0.3000	1.80			
Course 4	Graded Aggregate	Base	12.00	0.1600	1.92			
Required SN	red SN 5.77 Proposed pavement is 1.19% Under		erdesigned	Proposed SN	5.70			

Design Remarks	Widening/Turn Lanes	

Prepared By		4/30/2020 11:15 AM
	Phillip Snider	Date
Recommended By		
	State Roadway Design Engineer	Date
Approved By		
	State Pavement Engineer	Date

Filename: c:\users\psnider\documents\projectwise\d3400991\0013733 Pavement Design.xlsm

Flexible Pavement Design Analysis							
PI Number	0013733	County(s)	Douglas				
Project Number	N/A	Design Name	SR 6 +2-Year Through				
Project Description	Intersection Improvement - Prel	Intersection Improvement - Preliminary Design					

Traffic Data (AADTs are one-way)					Miscellaneous Data	a	
Initial Design Year	2030	Initial AADT, VPD	23,150	24 Hour Truck %	18.00	Lanes in one direction	2
Final Design Year	2050	Final AADT, VPD	29,400	SU Truck %	12.00	Curb & Gutter/Barrier	Yes
		Mean AADT, VPD	26,275	MU Truck %	6.00		

Design Data							
Lane Distribution Fa	actor (%)	80.00	Soil Support Value	2.50	Single Unit ESAL	0.40	
Terminal Serviceability Index 2.50		2.50	Regional Factor	1.80	Multiple Unit ESAL	1.50	
			User Defined 18-KIP ESAL	0.00	Calculated 18-KIP ESAL	0.77	
Non-Standard Value Comment	No SSS; Defa	ult values u	sed				

	Design Loading (Calculated 18-KIP ESAL)								
Mean AADT, VPD	LDF (%)	Vehicle Type	Volume (%)	ESAL Factor	Daily ESAL				
26,275	80.00	Single Unit Truck	12.00	0.40	1,009				
20,273	80.00	Multi Unit Truck	6.00	1.50	1,892				
	Total Daily ESALs								
	21,177,300								

	Proposed Flexible Full Depth Pavement Structure							
Course		Material	Thickness (inches)	Structural Coefficient	Structural Value			
Course 1	12.5 mm Superpay	ve, Polymer Modified	1.50	0.4400	0.66			
Course 2	19 mm Superpave		2.00	0.4400	0.88			
Course 3	0 1 25 0		1.00	0.4400	0.44			
Course 3	25 mm Superpave		10.00	0.3000	3.00			
Course 4	4 Graded Aggregate Base		12.00	0.1600	1.92			
Required SN 6.99 Proposed pavement is 1.23% Underdesigned		erdesigned	Proposed SN	6.90				

Design	
2 to 15.1	
Domorke	
Remarks	

Prepared By		4/30/2020 11:15 AM
	Phillip Snider	Date
Recommended By		
	State Roadway Design Engineer	Date
Approved By		
	State Pavement Engineer	Date

 $Filename: c: \label{lem:c:spsnider} c: \label{lem:c:spsnider} Course \label{lem:c:spsnider} Co$

Flexible Pavement Design Analysis							
PI Number	0013733	County(s)	Douglas				
Project Number	N/A	Design Name	SR6@SR5 Quandrant +2-Year				
Project Description	Intersection Improvement - Prel	Intersection Improvement - Preliminary Design					

Traffic Data (AADTs are one-way)					Miscellaneous Data	a	
Initial Design Year	Initial Design Year 2028 Initial AADT, VPD 1,750 24 Hour Truck % 18.00					Lanes in one direction	1
Final Design Year	2048	Final AADT, VPD	2,225	SU Truck %	12.00	Curb & Gutter/Barrier	Yes
		Mean AADT, VPD	1,988	MU Truck %	6.00		

	Design Data							
Lane Distribution Fa	actor (%)	100.00	Soil Support Value	2.50	Single Unit ESAL	0.40		
Terminal Serviceability Index 2.50		2.50	Regional Factor	1.80	Multiple Unit ESAL	1.50		
			User Defined 18-KIP ESAL	0.00	Calculated 18-KIP ESAL	0.77		
Non-Standard Value Comment	No SSS; Defa	ult values u	sed					

	Design Loading (Calculated 18-KIP ESAL)								
Mean AADT, VPD	LDF (%)	Vehicle Type	Volume (%)	ESAL Factor	Daily ESAL				
1,988	100.00	Single Unit Truck	12.00	0.40	96				
1,900	100.00	Multi Unit Truck	6.00	1.50	179				
	Total Daily ESALs								
	2,007,500								

	Proposed Flexible Full Depth Pavement Structure							
Course		Material	Thickness (inches)	Structural Coefficient	Structural Value			
Course 1	9.5 mm Type II Sup	perpave	1.25	0.4400	0.55			
Course 2	19 mm Superpave		2.00	0.4400	0.88			
Course 3	0 2 25 0		1.25	0.4400	0.55			
Course 3	23 mm Superpave	5 mm Superpave		0.3000	1.13			
Course 4	Graded Aggregate Base		12.00	0.1600	1.92			
Required SN 5.11 Proposed pavement is 1.71% Underdesigned		Proposed SN	5.03					

Design Remarks	Traffic Based on SR6 SB - SR 5 WB Turn Counts

Prepared By		5/7/2020 1:42 PM
	Phillip Snider	Date
Recommended By		
	State Roadway Design Engineer	Date
Approved By		
	State Pavement Engineer	Date

Filename: c:\users\psnider\documents\projectwise\d3400991\0013733 Pavement Design.xlsm

Rigid Pavement Design Analysis									
PI Number	0013733 County(s) Douglas								
Project Number	N/A		Design Na	ame	SR 6 +2-Year Rigid Alt				
Project Description Intersection Improvement - Preli			inary Design	1					
Section Location						Type Section	JPCP		
Begin Section Station	*	End Section	n Station		*	Section Length	*		

	Miscellaneous Data	a					
Initial Design Year	2030	Initial AADT, VPD	23,150	24 Hour Truck %	18.00	Lanes in one direction	2
Final Design Year 2050		Final AADT, VPD	29,400	SU Truck %	12.00	Curb & Gutter/Barrier	Yes
		Mean AADT, VPD	26,275	MU Truck %	6.00	Interstate	No

Design Loading (Calculated 18-KIP ESAL)							
Mean AADT, VPD	LDF (%)	Vehicle Type	Volume (%)	ESAL Factor	Daily ESAL		
		Other Vehicles	82.00	0.004	69		
26,275	80	Single Unit Truck	12.00	0.500	1,262		
		Multi Unit Truck	6.00	2.680	3,381		
Total Daily ESALs 4,712							
Total Design Period ESALs 34,397,600							

Design Data									
Terminal Serviceability Index (Pt) 2.50 Working Stress (psi) 450 Modulus of Elasticity (psi) 3,200,000								0,000	
Soil Support Value	Soil Support Value 2.50 Subgrade Modulus (k) 110 Subbase Modulus (k ₁) 155 Subbase Modulus (k _{eff})						155		
Trial Depth	Trial Depth of PCC Pavement (inches) 12.00 Calculated Stress from Equation (psi) 481.77								481.77
% Overstressed 7.06 % Underdesigned 6.59 Ba						Balance	ed Thickness (inc	hes)	12.43
Non-Standard Value Comment No SSS; Default values used									

Proposed Rigid Pavement Structure					
Material	Thickness (inches)				
JPCP - Jointed Portland Cement Concrete Pavement	12.00				
19 mm Superpave Asphaltic Concrete Interlayer	0.00				
Graded Aggregate Base	8.00				

JPCP - Dowel Bar Size and Spacing Refer to GDOT Standard 5046H: Joint Details for Portland Cement Concrete Paving

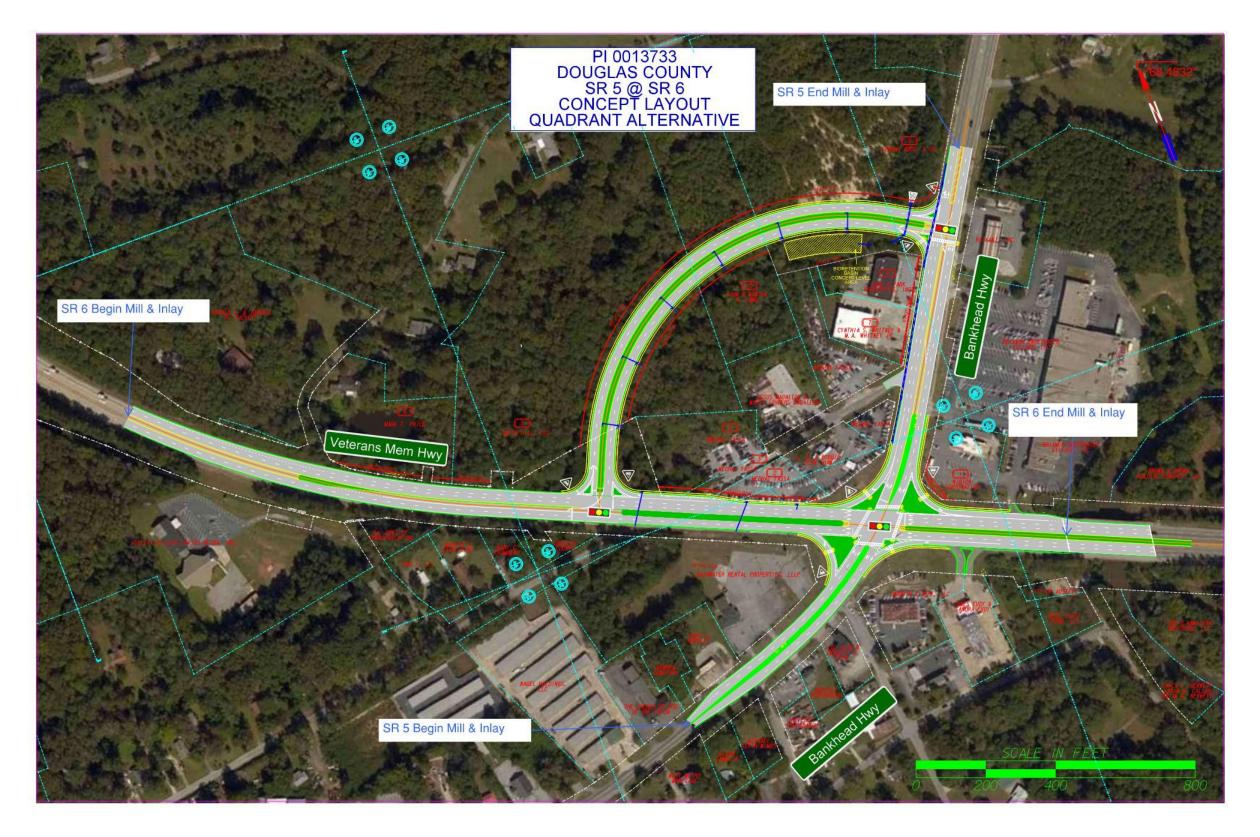
Design Remarks	12 inches typical maximum concrete pavement thickness	inches typical maximum concrete pavement thickness						
Prepared By		5/4/2020 8:43 AM						
	Phillip Snider	Date						
Recommended I	Зу							
	State Roadway Design Engineer	Date						
Approved By								
	State Pavement Engineer	Date						

 $Filename: c: \label{lem:c:users} $$ c: \end{cases} Psnider \end{cases} Psnider \end{cases} ODOT Pavement Design Tool - Version 2.0$

Appendix B: Location Maps



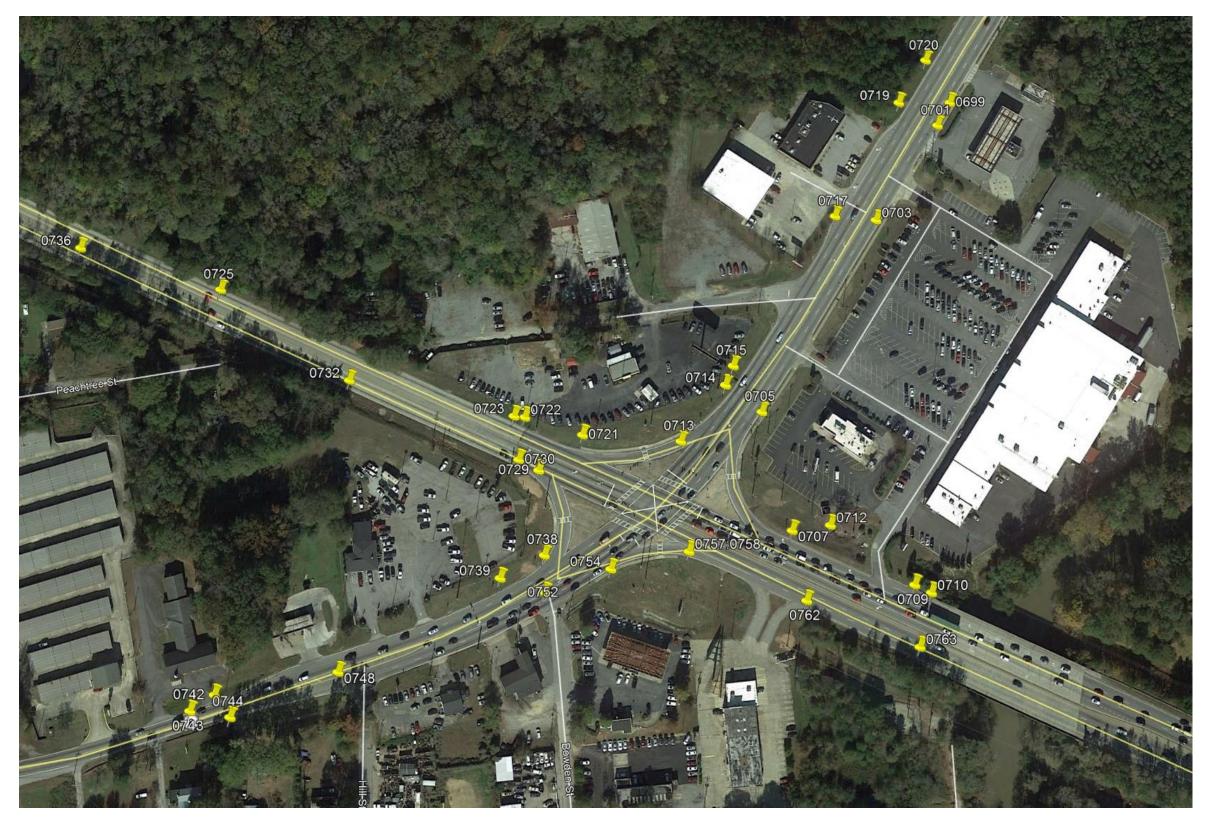
Project Location Map



Project Concept Layout



Project Concept Layout (Overlay)



Site Photo Locations

Appendix C: Traffic Data

Appendix C: Traffic Data SR 5 @ SR 6, Douglas County PI No 0013733 May 22, 2020

Department of Transportation State of Georgia

INTERDEPARTMENT CORRESPONDENCE

FILE Douglas County

P.I. # 0013733

OFFICE Planning

DATE

8/6/2018

FROM Paul Tanner, State Transportation Planning Administrator

TO Kimberly W. Nesbitt, State Program Delivery Administrator

Attention: Andrea Smith-Calloway

SUBJECT Design Traffic Forecasts for SR 5/US 78 @ SR 6/US 278 - CFI

The approved design traffic forecasts for the above project are attached in

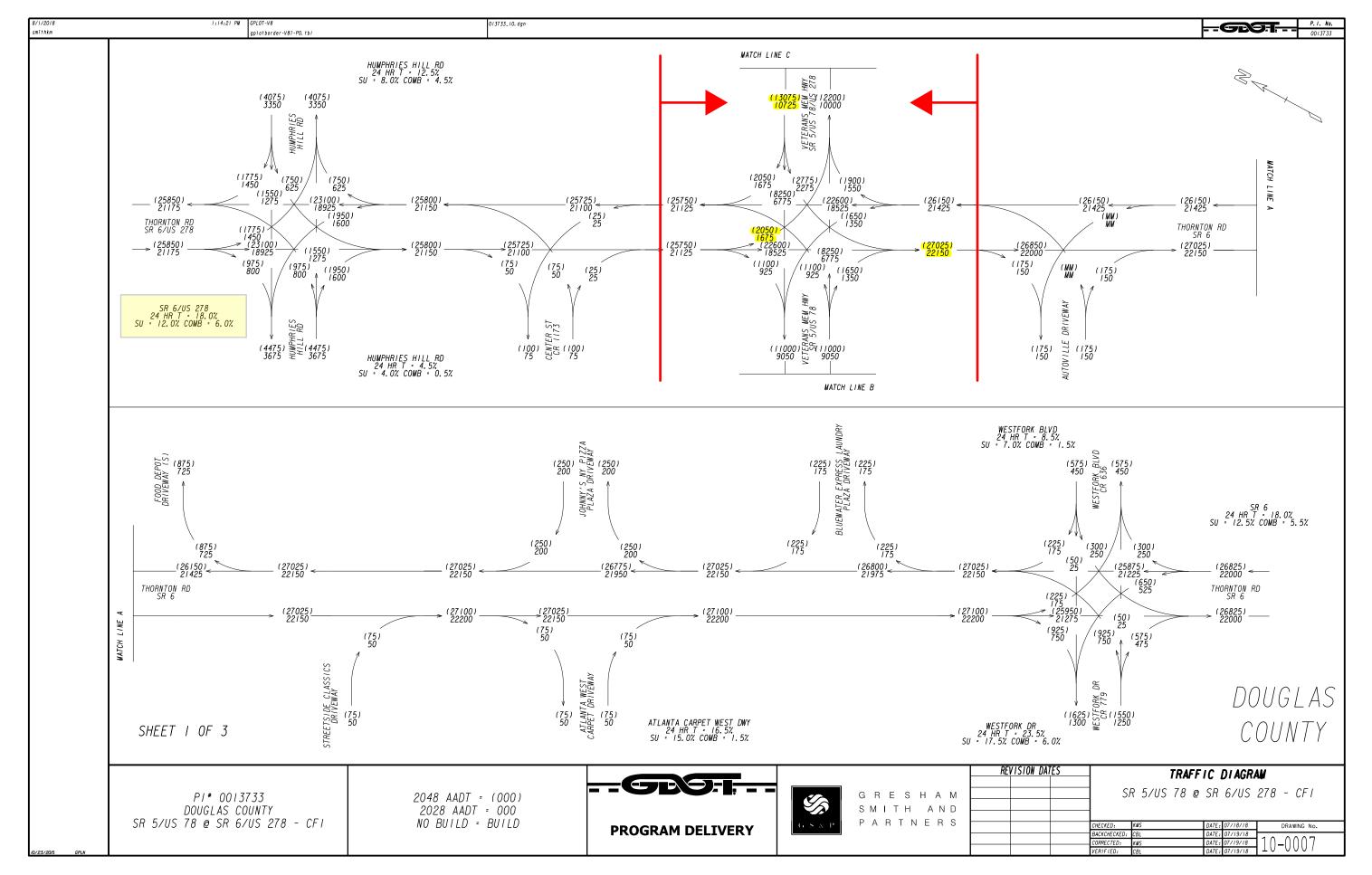
0013733_10.pdf and 0013733_10.dgn.

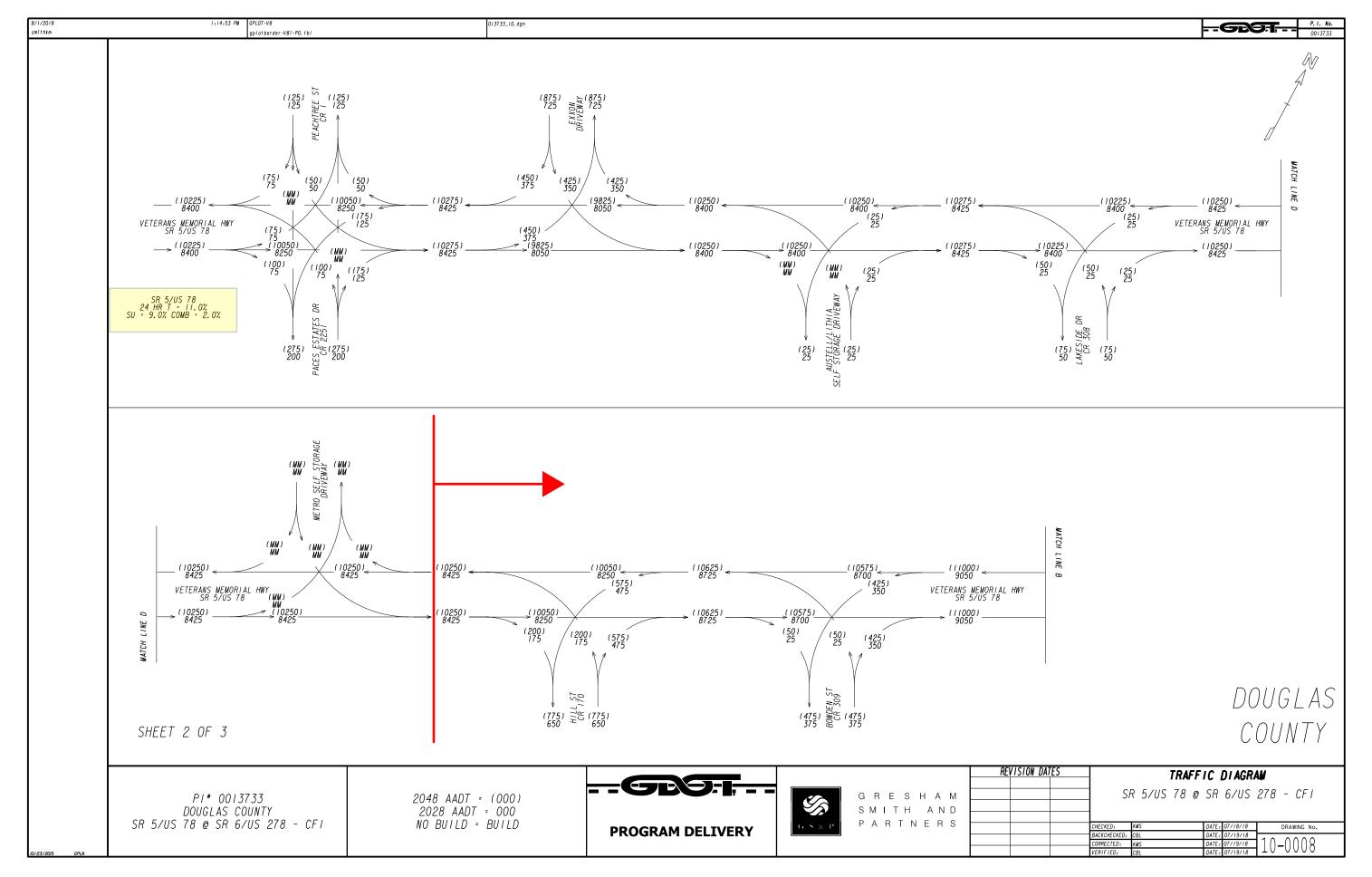
If you have any questions concerning this information please contact

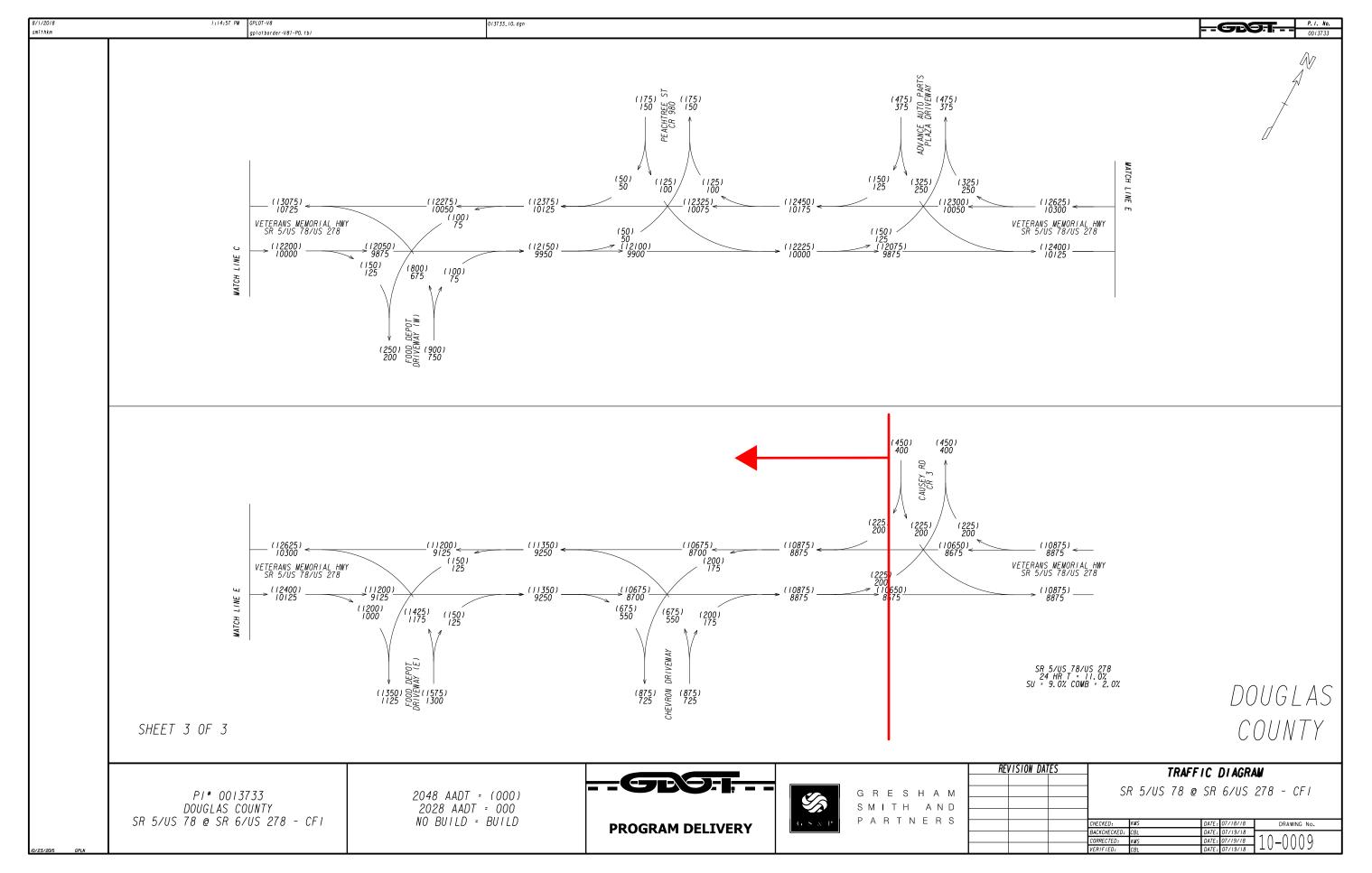
Andre Washington at 404-631-1925.

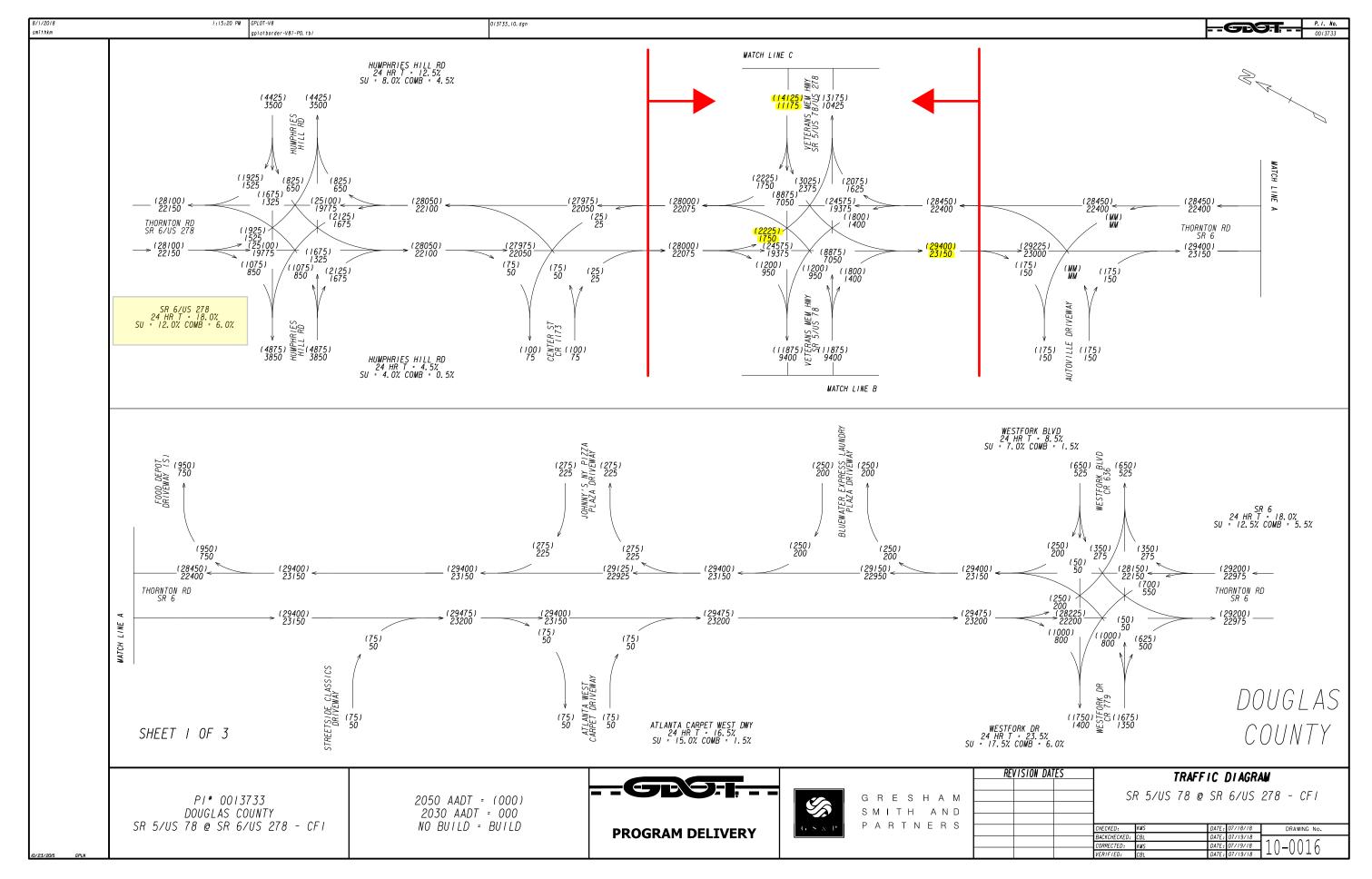
Nithin Gomez Gresham, Smith and Partners Design Traffic Review Consultant to GDOT 678-478-3350

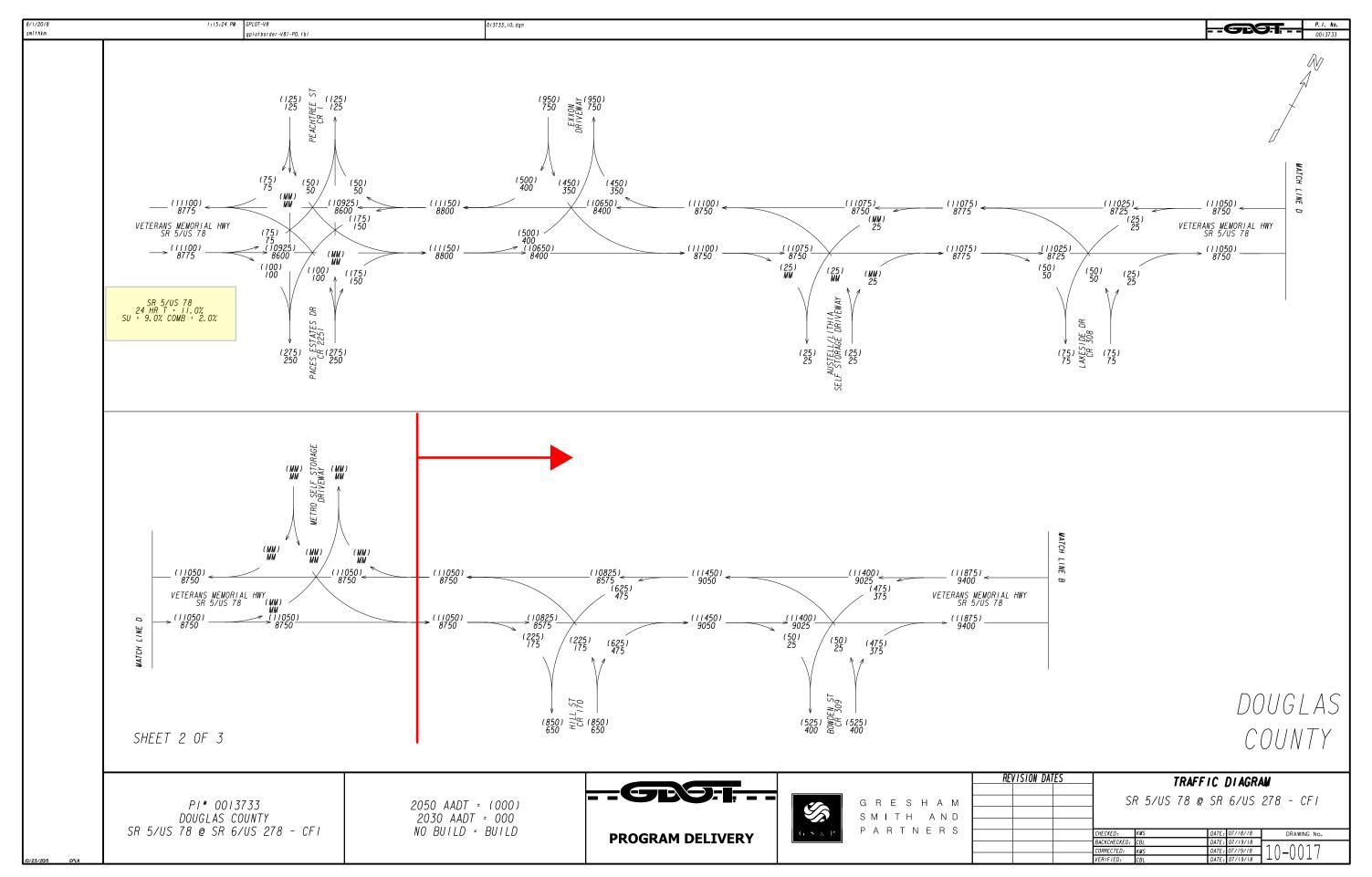
PT/NMG

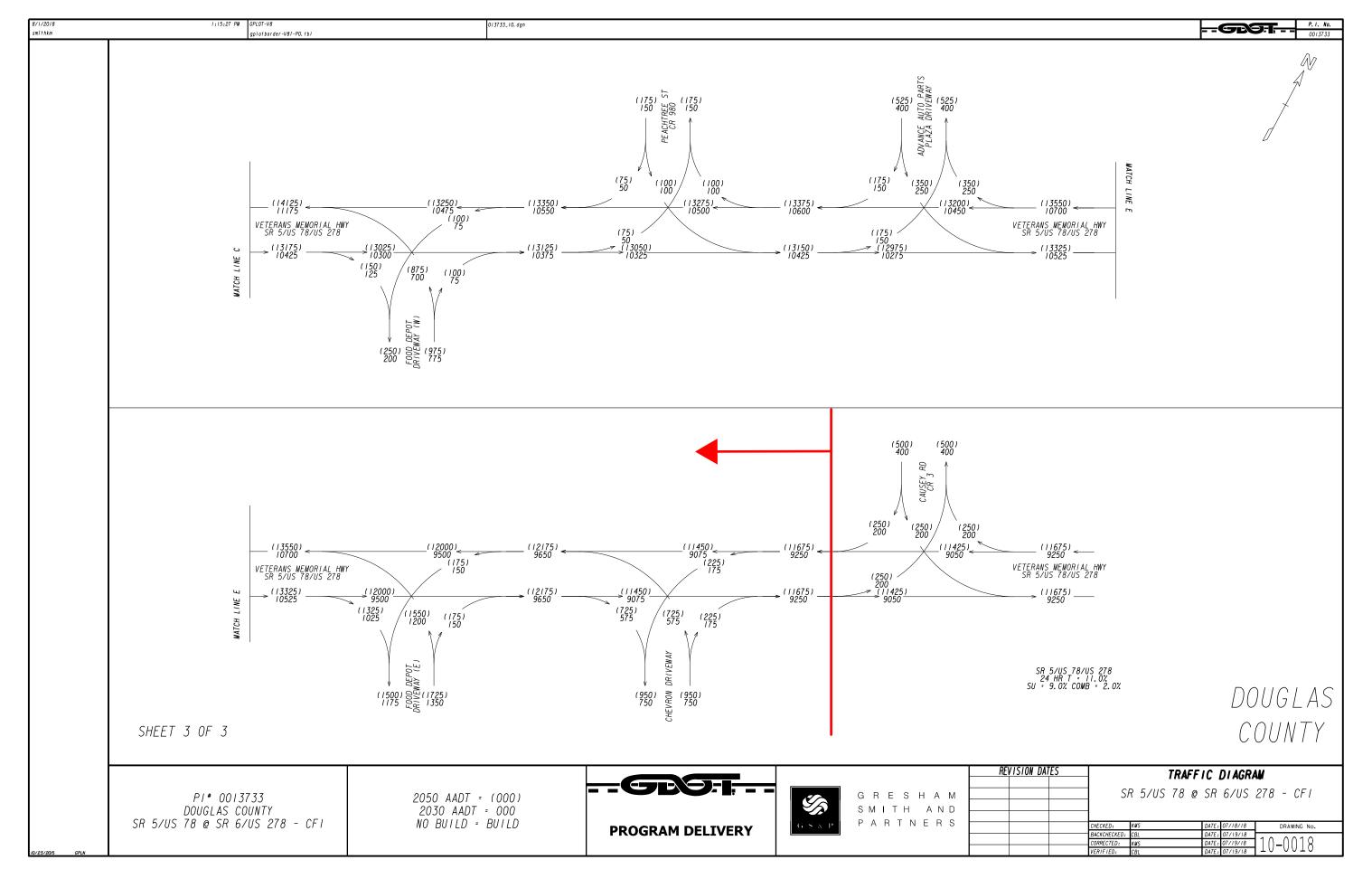












Appendix D: COPACES Data

Appendix D: COPACES Data SR 5 @ SR 6, Douglas County PI No 0013733 May 22, 2020

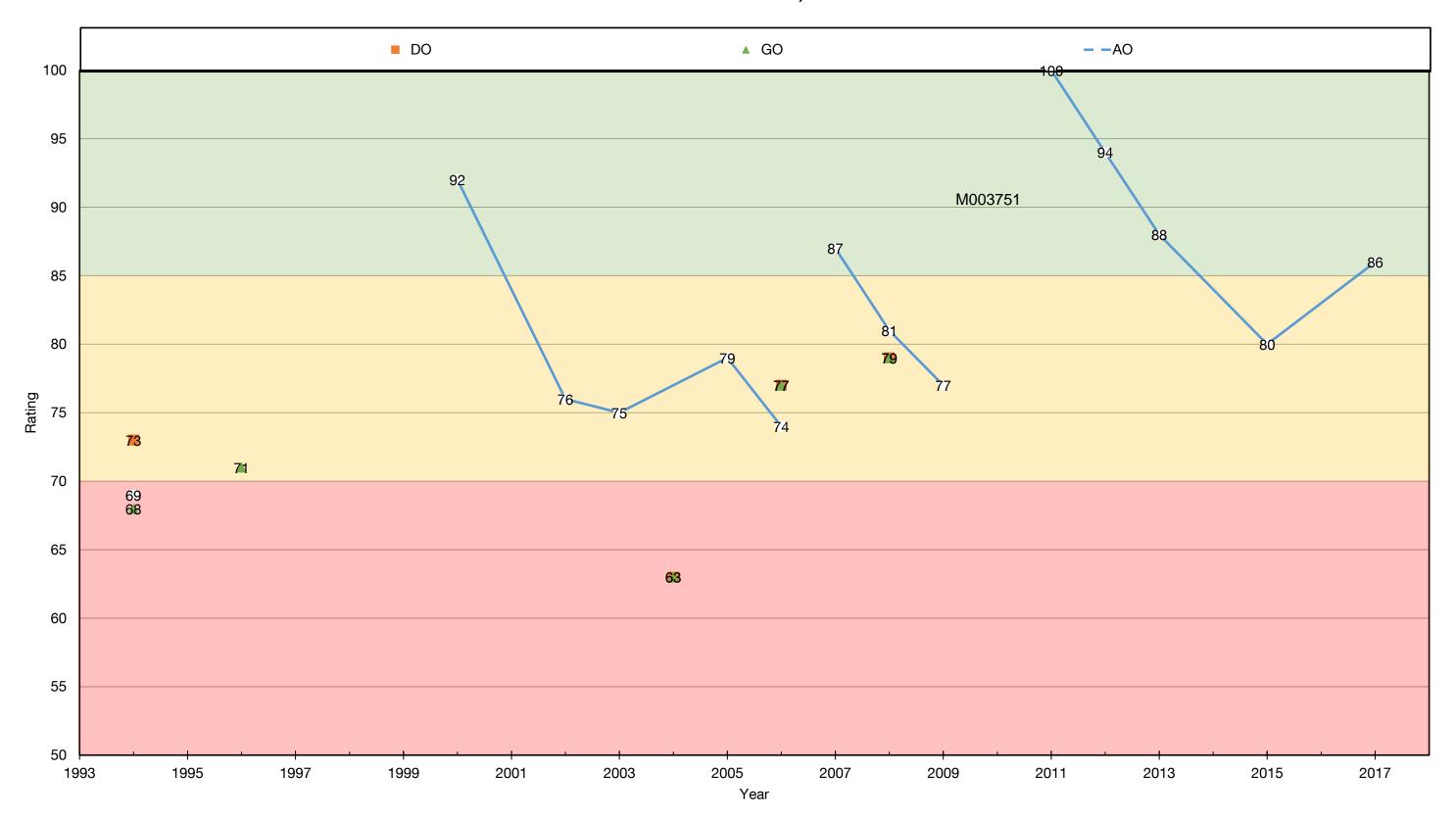
_	Соц	Distric unty:Dou		97	Rou	uteTyp	e:1	ı	Route Milepos	e No.:0 st from		ı						uffix:0 to:24.																			
		Rut D	epth			L	oad C	rackin	g			Blocl	k Crac	king		flectio acking		F	Raveling)	Edge	e Distre	ess		eding ushing			rrugatio Pushing			Pavem Section		Cro Slop		Patch Potho		Proj. Rating
Fiscal Year	Offlice	Avg (1/8 inch)	Deduct [1/8 inch]	Severity 1 Avg	Severity 1 Deduct	Severity 2 Avg	Severity 2 Deduct	Severity 3 Avg	Severity 3 Deduct	Severity 4 Avg	Severity 4 Deduct	Avg % of Sample	Severity [1,2,3]	Deduct	Avg Total Length	Severity [1,2,3]2	Deduct3	Avg % of Sample4	Severity [1,2,3]5	Deduct6	Avg % of Sample7	Severity [1,2,3]8	Deduct9	Avg % of Sample10	Severity [1,2,3]11	Deduct12	Avg % of Sample1	Severity [1,2,3]14	Deduct15	Avg % of Sample16	Severity [1,2,3]17	Deduct18	Avg	Deduct19	Avg20	Deduct21	Rating
1994	AO	1	2	50	15	0	0	0	0	0	0	35	1	8	45	1	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	69
2000		1	2	5	4	0	0	0	0	0	0	5	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	92
2002		1	2	50	15	0	0	0	0	0	0	10	1	4	8	1	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	76
2003		1	2	55	15	0	0	0	0	0	0	13	1	5	8	1	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	75
2005		1	2	50	15	0	0	0	0	0	0	10	1	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	79
2006		1	2	48	15	0	0	0	0	0	0	35	1	8	0	0	0	0	0	0	0	0	0	0	0	0	5	1	1	0	0	0	0	0	0	0	74
2007		1	2	0	0	0	0	0	0	0	0	59	1	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	87
2008		1	2	15	7	0	0	0	0	0	0	52	1	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	81
2009		1	2	72	15	0	0	0	0	0	0	25	1	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	77
2011		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	100
2012		0	0	3	3	0	0	0	0	0	0	9	1	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	94
2013		0	0	8	5	0	0	0	0	0	0	28	1	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	88
2015		0	0	25	9	0	0	0	0	0	0	21	1	6	12	1	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	80
2017		0	0	0	0	2	0	0	0	0	0	10	1	4	12	2	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	86
2018	AO	0	0	0	0	5	0	0	0	0	0	25	2	11	12	2	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	75

Appendix D: COPACES Data SR 5 @ SR 6, Douglas County PI No 0013733 May 22, 2020 District

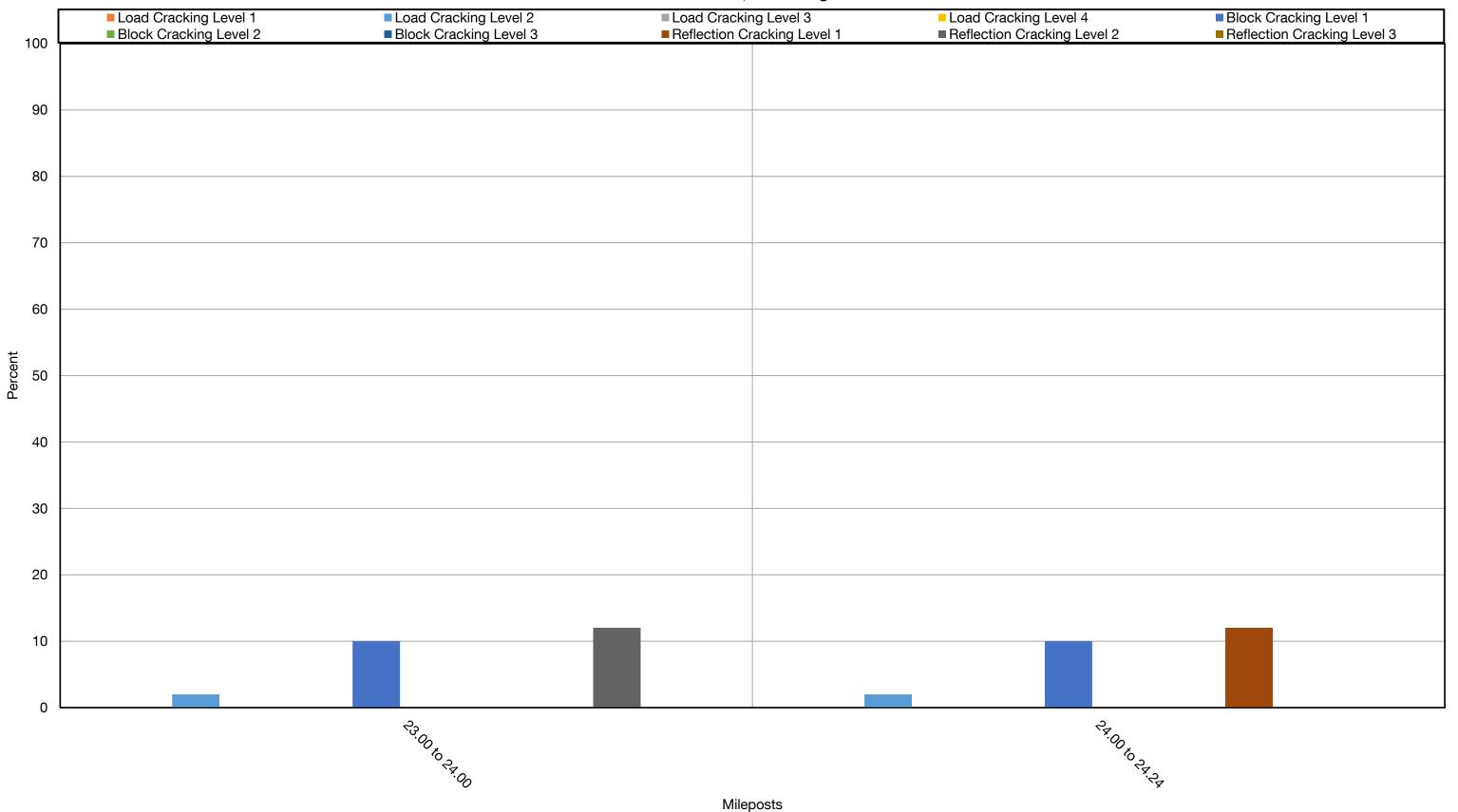
Route Suffix:00 District:7 RouteType:1 Route No.:0005 County:Douglas-097 Milepost from:23.00 Milepost to:24.17

		, , ,	<u> </u>				Rut D	epth			acking		Blo Crac	ock	Refle Crac	ction	Rave	eling	Ed Distr	_	Bleed Flust	_	Corrug /Pushir		Loss Pavem Section		Cross S	Slopes		
Fiscal Year	Office	TRIPDATE	COUNTYNO	ROUTENO	SEGMENTFROM	SEGMENTTO	RUT_OUT_WP	RUT_IN_WP	LOAD_LEV1	LOAD_LEV2	LOAD_LEV3	LOAD_LEV4	BLOCK_PCT	BLOCK_LEV	REFLECT_LEN	REFLECT_LEV	RAVEL_PCT	RAVEL_LEV	EDGE_PCT	EDGE_LEV	BLEED_PCT	BLEED_LEV	CORRUG_PCT	CORRUG_LEV	LOSS_PAVE_PCT	LOSS_PAVE_LEV	CROSS_SLOPE_LEFT	CROSS_SLOPE_RIGP	PATCH_POTHOLE	SEGMENT_RATING
1994 A	NO.	2/9/1994 1:22:36 PM	097	0005	23.00	23.90	1	1	50	0	0	0	35	1	1 45	1	0	0	0	0	0	(0	0	0	0	0	0	0	69
2000 A	١O	2/15/2000 12:10:14 PM	097	0005	23.00	23.10	1	1	5	0	0	0	5	1	1 0	0	0	0	0	0	0	C	0 0	0	0	0	0	0	0	92
2002 A	lΟ.	10/26/2001 2:52:03 PM	097	0005	23.00	24.00	1	1	50	0	0	0	10	1	1 15	1	0	0	0	0	0	C	0	0	0	0	0	0	0	76
2002 A	١O	10/26/2001 2:52:03 PM	097	0005	24.00	24.17	1	1	50	0	0	0	10	1	1 0	0	0	0	0	0	0	C	0 0	0	0	0	0	0	0	79
2003 A	O	10/2/2002 8:44:26 AM	097	0005	23.00	24.00	1	1	55	0	0	0	15	1	1 15	1	0	0	0	0	0	C	0 0	0	0	0	0	0	0	75
2003 A	١O	10/2/2002 8:44:26 AM	097	0005	24.00	24.17	1	1	55	0	0	0	10	1	1 0	0	0	0	0	0	0	C	0	0	0	0	0	0	0	79
2005 A	4O	10/7/2004 7:54:46 AM	097	0005	23.00	24.17	1	1	50	0	0	0	10	1	1 0	0	0	0	0	0	0	C	0	0	0	0	0	0	0	79
2006 A	١O	10/7/2005 2:16:13 PM	097	0005	23.00	24.00	1	1	50	0	0	0	30	1	1 0	0	0	0	0	0	0	C) 5	1	0	0	0	0	0	75
2006 A	4O	10/7/2005 2:16:13 PM	097	0005	24.00	24.17	1	1	45	0	0	0	40	1	1 0	0	0	0	0	0	0	C) 5	1	0	0	0	0	0	73
2007 A	Ю	1/31/2007 4:27:45 PM	097	0005	23.00	24.00	1	1	0	0	0	0	18	1	1 0	0	0	0	0	0	0	C	0	0	0	0	0	0	0	93
2007 A	4O	1/31/2007 4:27:45 PM	097	0005	24.00	24.24	1	1	0	0	0	0	100	1	1 0	0	0	0	0	0	0	C	0	0	0	0	0	0	0	80
2008 A	١O	4/9/2008 2:28:51 PM	097	0005	23.00	24.00	1	1	1	0	0	0	85	1	1 0	0	0	0	0	0	0	C	0	0	0	0	0	0	0	79
2008 A	λO	10/22/2007 7:17:50 AM	097	0005	23.58	24.00	1	1	23	0	0	0	18	1	1 0	0	0	0	0	0	0	C	0	0	0	0	0	0	0	85
2008 A				0005	24.00	24.24	2	1	31	0	0	0	100	1	1 0	0	0	0	0	0	0	C	0	0	0	0	0	0	0	67
2008 A		4/9/2008 2:28:51 PM	097	0005	24.00	24.24	1	1	5	0	0	0	5	1	1 0	0	0	0	0	0	0	C	0	0	0	0	0	0	0	92
2009 A		10/13/2008 11:32:47 AM	1 097	0005	23.00	23.58	1	1	65	0	0	0	30	1	1 0	0	0	0	0	0	0	(0	0	0	0	0	0	0	76
2009 A		9/26/2008 10:30:21 AM		0005	23.58	24.00	1	0		0	0	0	6	1	1 0	0	0	0	0	0	0	(0	0	0	0	0	0	0	81
2009 A		9/26/2008 10:30:21 AM		0005	24.00	24.24	0	1	63	0	0	0	38	1	1 0	0	0	0	0	0	0	C	0	0	0	0	0	0	0	75
2011 A		10/28/2010 2:31:24 PM		0005	23.00	23.58	1	1	0	0	0	0	0	C	0	0	0	0	0	0	0	(0 0	0	0	0	0	0	0	98
2011 A		11/15/2010 8:52:31 AM		0005	23.58	24.00	0	0	0	0	0	0	0	С	0	0	0	0	0	0	0	C	0	0	0	0	0	0	0	100
2011 A		11/15/2010 8:52:31 AM		0005	24.00	24.24	0	0	0	0	0	0	0	С	0	0	0	0	0	0	0	C	0	0	0	0	0	0	0	100
2012 A				0005	23.00	23.92	0	0	0	0	0	0	24	1	1 0	0	0	0	0	0	0	C	0	0	0	0	0	0	0	94
2012 A		12/3/2011 5:36:26 PM	097	0005	23.58	24.00	0	0	2	0	0	0	4	1	1 0	0	0	0	0	0	0	(0	0	0	0	0	0	0	96
2012 A		12/3/2011 5:36:26 PM	097	0005	24.00	24.24	0	0		0	0	0	0	C	0	0	0	0	0	0	0	(0	0	0	0	0	0	0	96
2013 A		11/21/2012 8:51:44 AM		0005	23.00	23.92	0	0	0	0	0	0	24	1	1 0	0	0	0	0	0	0	C	0	0	0	0	0	0	0	94
2013 A		12/5/2012 8:18:20 AM	097	0005	23.58	24.00	0	0		0	0	0	41	1	1 0	0	0	0	0	0	0	C	0	0	0	0	0	0	0	89
2013 A		12/5/2012 8:18:20 AM	097	0005	24.00	24.24	0	0	21	0	0	0	18	1	1 0	0	0	0	0	0	0	C	0	0	0	0	0	0	0	87
2015 A		10/21/2014 11:12:53 AM		0005	23.00	23.92	0	0		0	0	0	12	1	1 36	1	0	0	0	0	0	(0	0	0	0	0	0	0	90
2015 A		12/23/2014 7:45:50 AM		0005	23.58	24.00	1	1	45	0	0	0	30	1	1 0	0	0	0	0	0	0	C	0	0	0	0	0	0	2	74
2015 A		12/23/2014 7:45:50 AM		0005	24.00	24.24	0	0		0	0	0	20	1	1 0	0	0	0	0	0	0	C	0	0	0	0	0	0	0	84
2017 A		1/11/2017 1:34:14 PM	097	0005	23.00	24.00	0	0		2	0	0	10	1	1 12	2	0	0	0	0	0	(0	0	0	0	0	0	0	86
2017 A		1/11/2017 1:34:14 PM	097	0005	24.00	24.24	0	0		2	0	0	10	1	1 12	1	0	0	0	0	0	C	0	0	0	0	0	0	0	89

SR 5 MP 23-24.24; COPACES chart



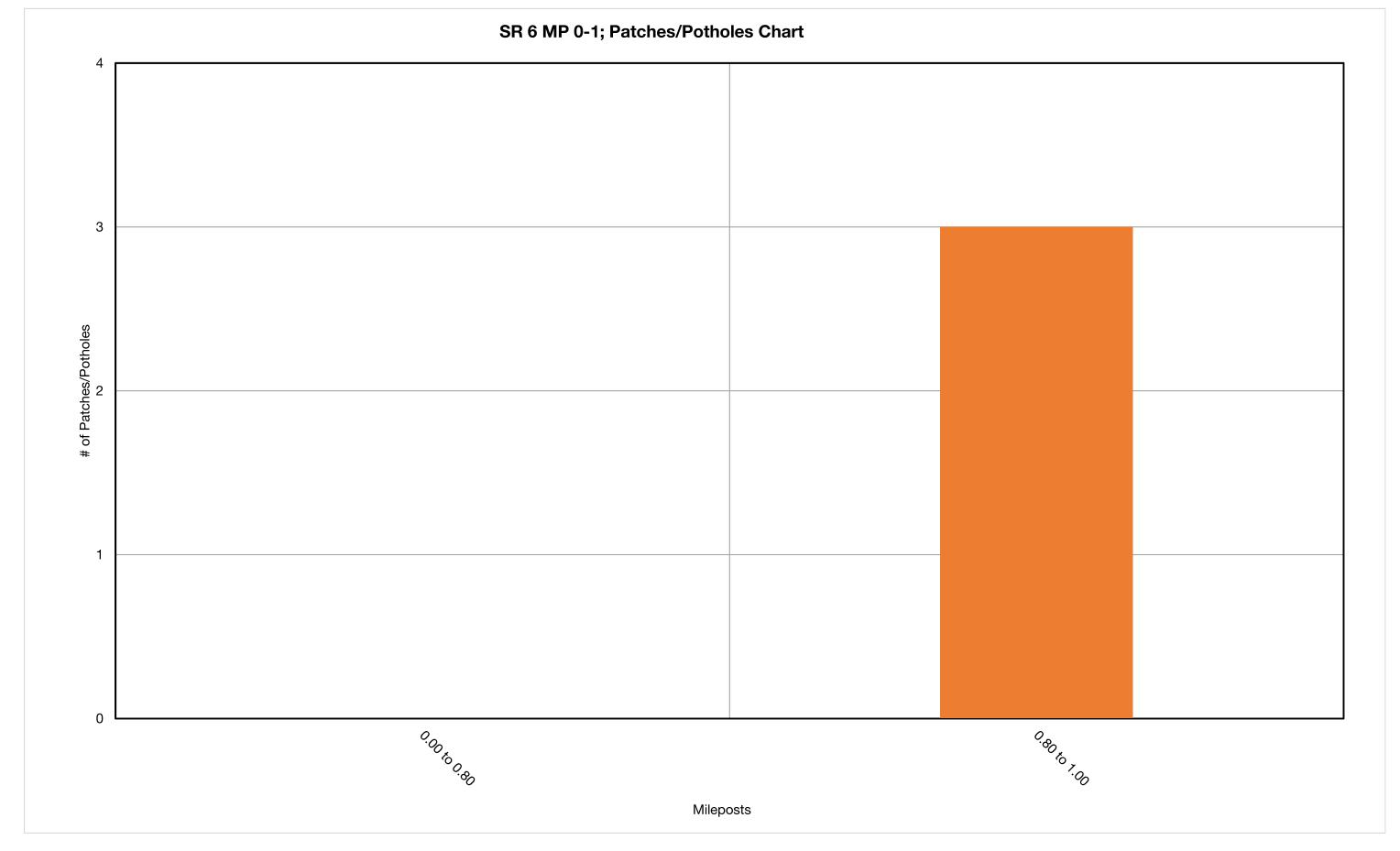
SR 5 MP 23-24.24; Cracking Chart

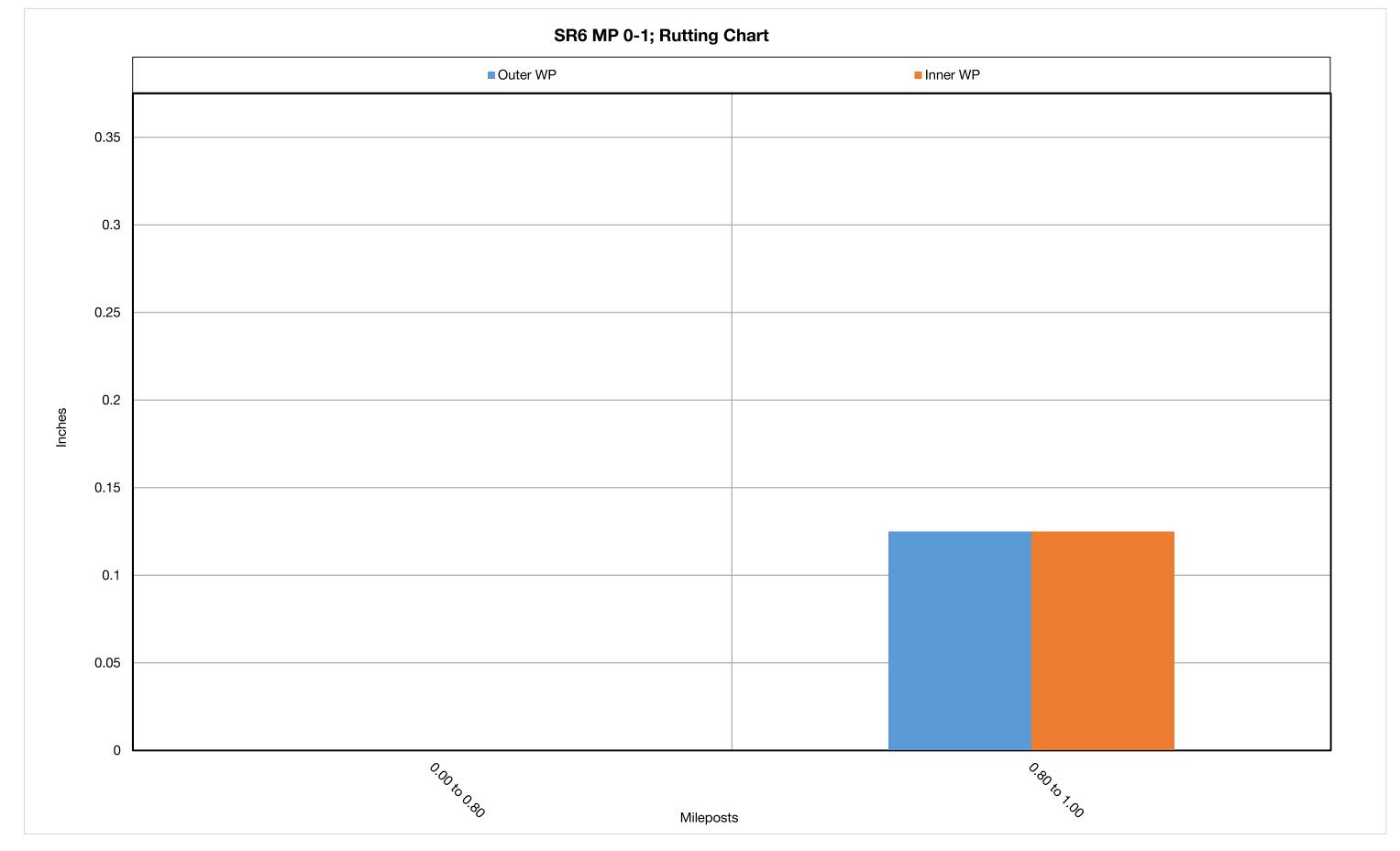


Appendix D: COPACES Data SR 5 @ SR 6, Douglas County PI No 0013733 May 22, 2020

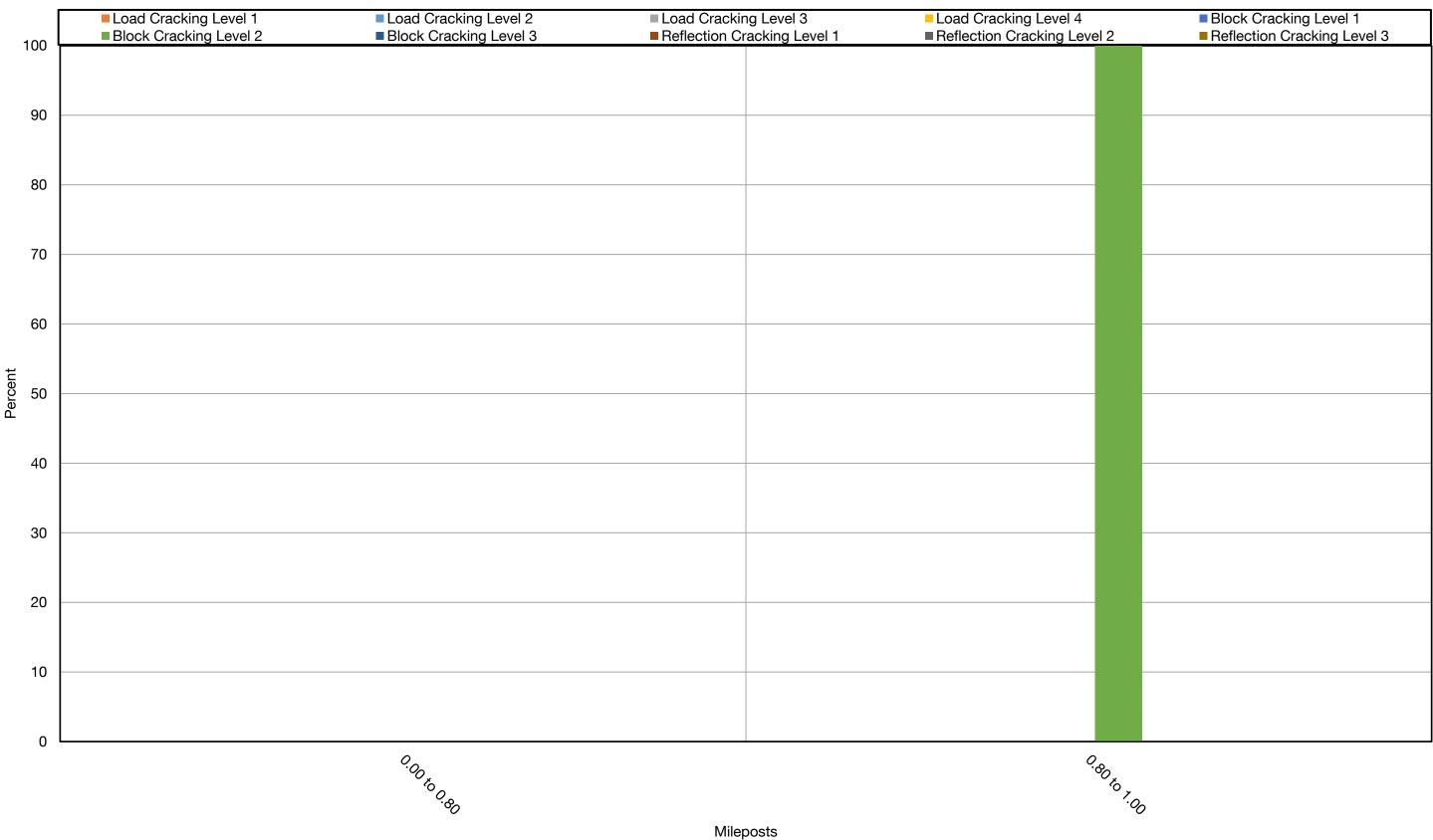
,,																																					
	Coun	Distric nty:Dou		97	F	RouteT	ype:1			oute No post fr								oute Su epost 1																			
		Rut De	pth			Lo	oad Cr	acking				Block	Crack	ing		lection acking		Ra	veling		Edge	Distre	ss		eding/ Ishing			ugatior ushing	1		Paveme ection	∍nt	Cross Slope:		Patches Pothole		-
Fiscal Year	Office	Avg (1/8 inch)	Deduct [1/8 inch]	Severity 1 Avg	Severity 1 Deduct	Severity 2 Avg	Severity 2 Deduct	Severity 3 Avg	Severity 3 Deduct	Severity 4 Avg	Severity 4 Deduct	Avg % of Sample	Severity [1,2,3]	Deduct	Avg Total Length	Severity [1,2,3]2	Deduct3	Avg % of Sample4	Severity [1,2,3]5	Deduct6	Avg % of Sample7	Severity [1,2,3]8	Deduct9	Avg % of Sample10	Severity [1,2,3]11	Deduct12	Avg % of Sample13	Severity [1,2,3]14	Deduct15	Avg % of Sample16	Severity [1,2,3]17	Deduct18	Avg	Deduct19	Avg20	Deduct21	Rating
1994 A	O	1	2	0	0	0	0	0	0	0	0	8	1	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	95
1995 A	٠O	1	2	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	1	1	0	0	0	0	0	0	0	95 94
1996 A	٠O	1	2	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	1	1	0	0	0	0	0	0	0	94 79
2000 A		1	2	50	15	0	0	0	0	0	0	10	1	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	79
2001 G		1	2	99	15	0	0	0	0	0	0	60	1	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	72
2002 A		1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	98 71
2003 A		1	2	99	15	0	0	0	0	0	0	65	1	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	71
2005 A		1	2	10	6	0	0	0	0	0	0	5	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	90
2008 A		1	2	4	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	95
2009 A		1	2	13	7	0	0	0	0	0	0	6	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	89 89
2010 A		1	2	13	7	0	0	0	0	0	0	6	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	89
2011 A		1	2	13	7	0	0	0	0	0	0	10	1	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	85
2012 A		1	2	0	0	0	0	0	0	0	0	50	1	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	86
2013 A		1	2	0	0	0	0	0	0	0	0	50	2	18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	78
2015 A	O	1	2	0	0	0	0	0	0	0	0	50	2	18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	78

	District:7 County:Douglas-097			Route	eType:1			oute No epost fr	o.:0006 om:0.00)						Route Suf lilepost to													
						Rut Dept	h L	_oad Cr	acking			Block Cracking		Reflection Cracking	۱ ا	Raveling		Edge Distress		leeding/ lushing		Corrugation Pushing	on F	oss Pavement Section	Cı	ross Slo	pes		
Fiscal Year	Office	HIPDALE			SEGMENTTO	RUT_OUT_WP	RUT_IN_WP	LOAD_LEV1	LOAD_LEV2	LOAD_LEV3	LOAD_LEV4	BLOCK_PCT	BLOCK_LEV	REFLECT_LEN	REFLECT_LEV	RAVEL_PCT	RAVEL_LEV	EDGE_PCT	EDGE_LEV	BLEED_PCT	BLEED_LEV	CORRUG_PCT	CORRUG_LEV	LOSS_PAVE_PCT	LOSS_PAVE_LEV	CROSS_SLOPE_LEFT	CROSS_SLOPE_RIGH	PATCH_POTHOLE	SEGMENT_RATING
1994 AO	2/25/1994 1:23:14 PM	097	0006	0.80	1.00	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	98
1994 AO	2/25/1994 1:23:15 PM	097	0006	1.00	0.80	1	1	0	0	0	0	15	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	93
1995 AO	5/24/1995 11:07:14 AM	097	0006	0.80	1.00	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	98
1995 AO	5/24/1995 11:20:02 AM	097	0006	1.00	0.80	1	1	5	0	0	0	0	0	0	0	0	0	0	0	0	0	10	1	0	0	0	0	0	93
1996 AO	7/27/1995 11:26:52 AM	097	0006	0.80	1.00	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	98
1996 AO	7/27/1995 11:32:43 AM	097	0006	1.00	0.80	1	1	5	0	0	0	0	0	0	0	0	0	0	0	0	0	10	1	0	0	0	0	0	93
2000 AO	2/15/2000 12:54:10 PM	097	0006	0.80	1.00	1	1	50	0	0	0	10	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	79
2001 GC	1/19/2001 12:01:54 PM	097	0006	0.80	1.00	1	1	99	0	0	0	60	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	72
2002 AO	10/26/2001 3:12:51 PM	097	0006	0.00	1.00	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	98
2003 AO	10/1/2002 2:27:41 PM	097	0006	0.80	1.00	1	1	99	0	0	0	65	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	71
2005 AO	10/22/2004 11:50:25 AM	097	0006	0.00	1.00	1	1	10	0	0	0	5	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	90
2008 AO	11/27/2007 11:11:58 AM	097	0006	0.00	0.80	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	100
2008 AO	11/27/2007 11:15:59 AM	097	0006	0.80	1.00	1	1	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	93
2009 AO	11/6/2008 4:21:36 PM	097	0006	0.00	0.80	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	100
2009 AO	11/6/2008 4:24:24 PM	097	0006	0.80	1.00	1	1	25	0	0	0	12	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	85
2010 AO	10/20/2009 1:35:13 PM	097	0006	0.00	0.80	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	100
2010 AO	10/20/2009 1:36:11 PM	097	0006	0.80	1.00	1	1	25	0	0	0	12	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	85
2011 AO	11/1/2010 3:59:51 PM	097	0006	0.00	0.80	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	100
2011 AO	11/1/2010 12:26:05 PM	097	0006	0.80	1.00	1	1	25	0	0	0	20	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	81
2012 AO	10/28/2011 9:57:30 AM	097	0006	0.00	0.80	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	100
2012 AO	10/28/2011 9:59:02 AM	097	0006	0.80	1.00	1	1	0	0	0	0	100	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	78
2013 AO	11/21/2012 8:58:34 AM	097	0006	0.00	0.80	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	100
2013 AO	11/9/2012 2:13:10 PM	097	0006	0.80	1.00	1	1	0	0	0	0	100	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	64
2015 AO		097	0006	0.00	0.80	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	100
2015 AO	10/21/2014 12:43:32 PM	097	0006	0.80	1.00	1	1	0	0	0	0	100	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	61

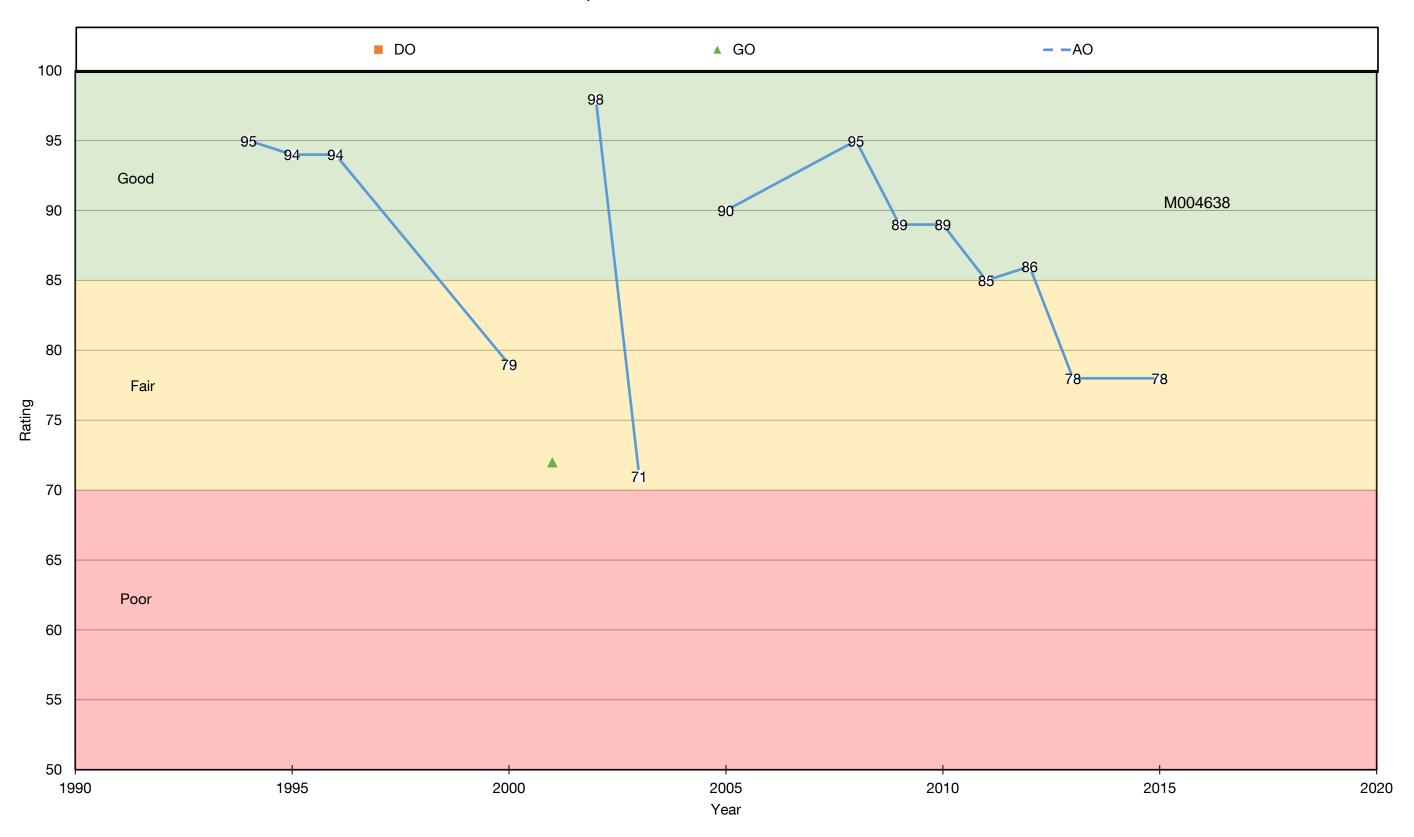




SR 6 MP 0-1; Cracking Chart



SR 6 MP 0-1; COPACES chart



Appendix E: Historic Documents

PROJECT NO: CSSTP-M003-00(751) COUNTY: DOUGLAS

DEPARTMENT OF TRANSPORTATION STATE OF GEORGIA

PLAN OF PROPOSED PROJECT NO: CSSTP-M003-00(751) P.I. NO.: M003751 COUNTY: DOUGLAS

> FEDERAL ROUTE: ST2812 STATE ROUTE: 5

CSSTP-M003-00(751) IS LOCATED: 100% WITHIN CONGRESSIONAL DISTRICT NO. 13

CSSTP-M003-00(751) IS LOCATED: 100% WITHIN DOUGLAS COUNTY

DOUGLAS IS COUNTY NO. 097

MID-POINT COORDINATES (X,Y): (2126144.59, 1370014.80) WEST ZONE

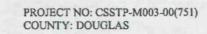
COMPLETED PLANS: AUGUST 25, 2008
REVISED PLANS: SEPTEMBER 4, 2008
REVISED PLANS: SEPTEMBER 30, 2008

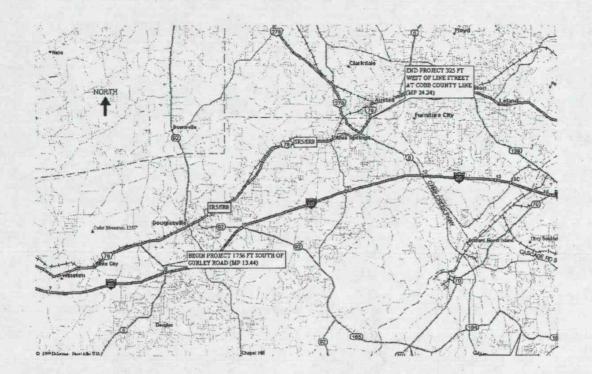
LENGTH OF PROJECT IN MILES TOTAL NET LENGTH OF PROJECT 10.51 NET LENGTH OF EXCEPTIONS 00.00 GROSS LENGTH OF PROJECT 10.51 PRESENT TRAFFIC: 11520-31180 ADT

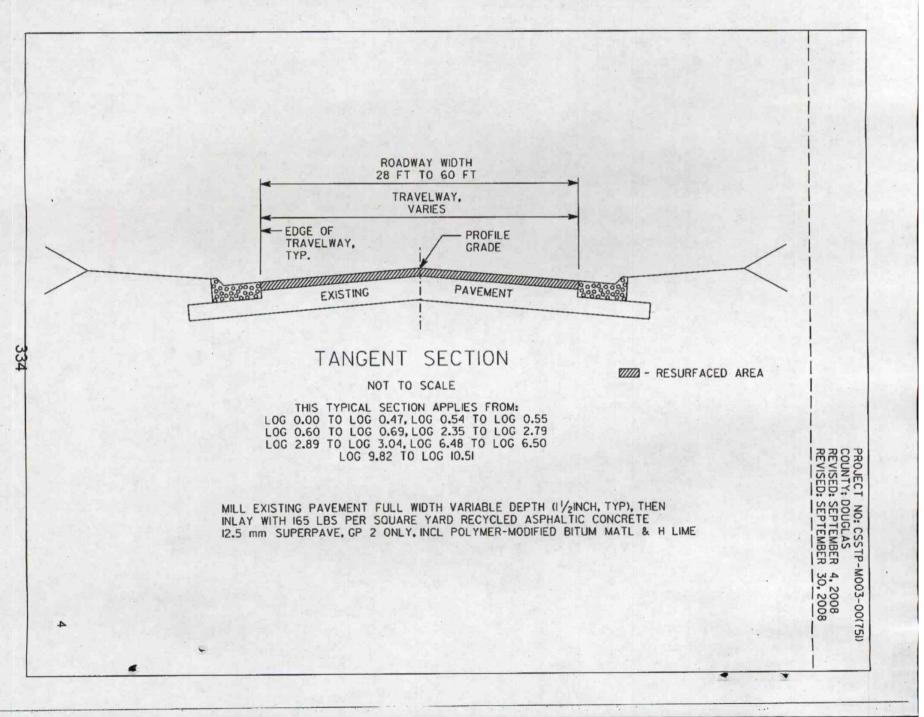
PROJECT NO: CSSTP-M003-00(751) COUNTY: DOUGLAS

INDEX

- 1 COVER SHEET
- 2 INDEX
- 3 LOCATION SKETCH
- 4-9 TYPICAL SECTION
- 10-17 ROADWAY LOG
- 18-19 DETAILED ESTIMATE
- 20-21 GENERAL NOTES
- 22 26 CONSTRUCTION DETAILS PAVEMENT MARKING DETAILS AND NOTES
- 27 30 CONSTRUCTION DETAILS CURB CUT (WHEELCHAIR) RAMPS
- 31 CONSTRUCTION DETAILS LOOP DETECTORS
- 32 GA. STD. 9102 TRAFFIC CONTROL, 2 LANE (07-99)

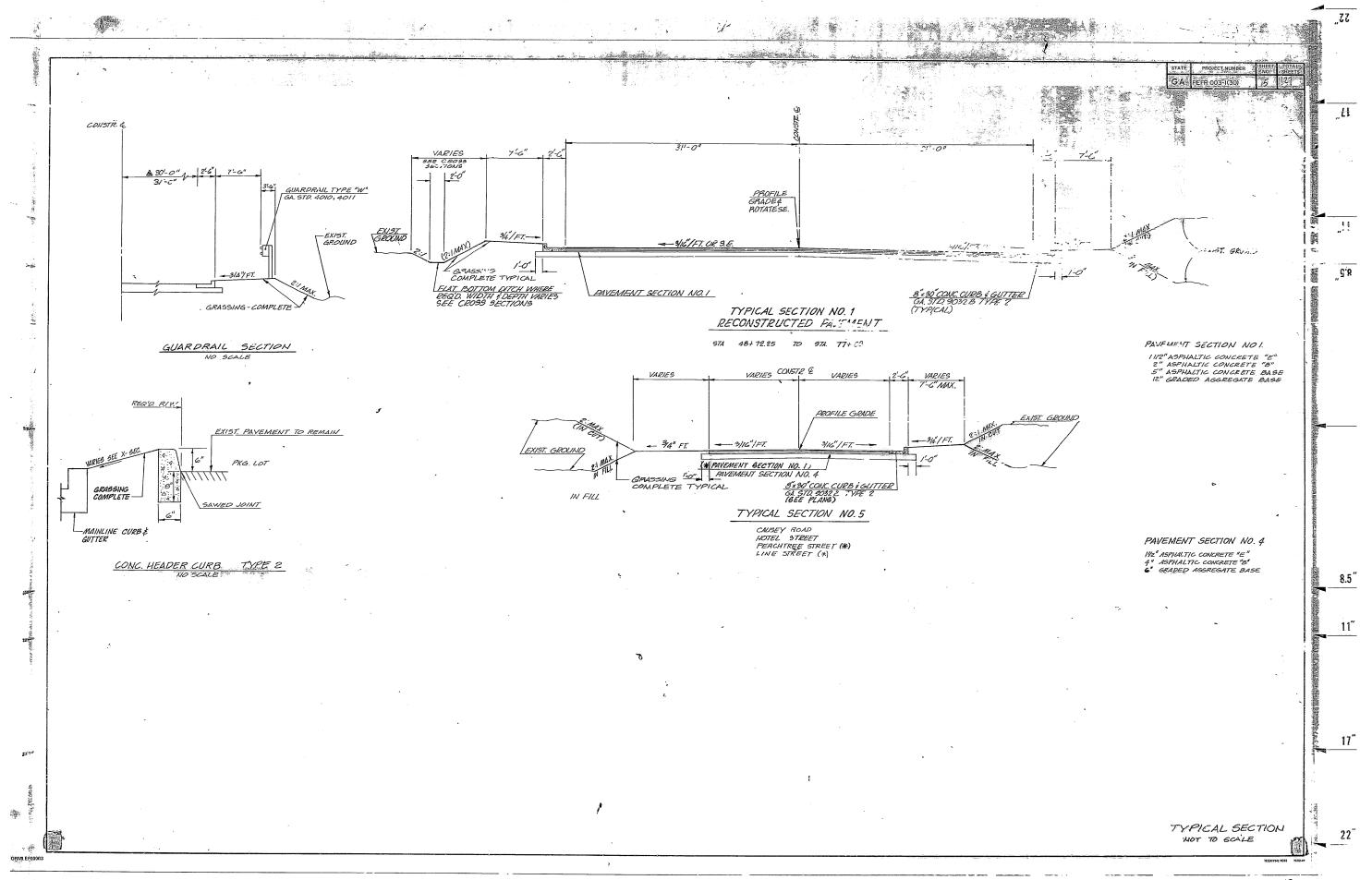


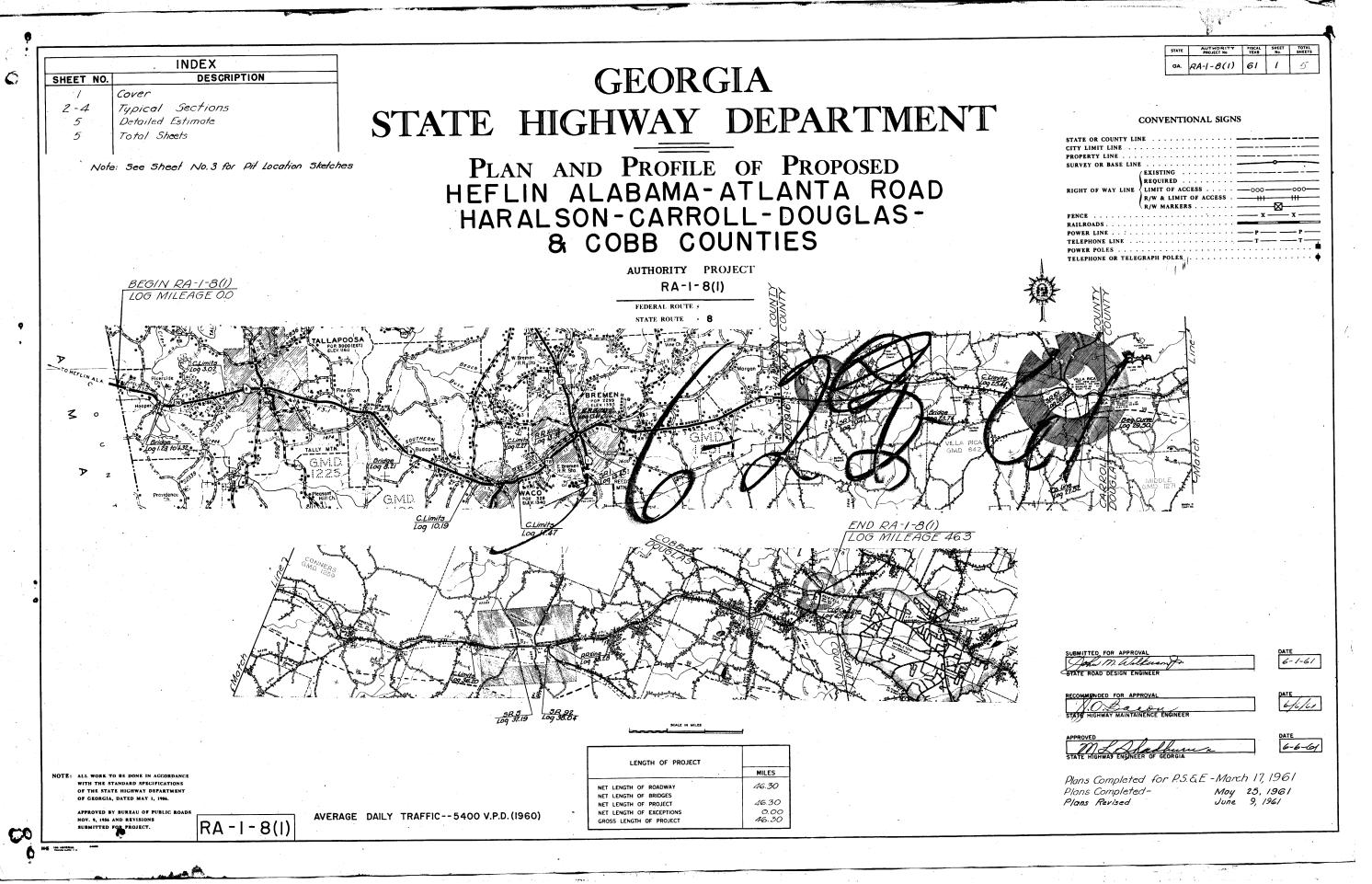




SR 5 @ SR 6, Douglas County PI No 0013733 May 22, 2020 STATE OF GEORGIA PLAN AND PROFILE OF PROPOSED BANKHEAD HIGHWAY DOUGLAS COUNTY FEDERAL AID PROJECT DOUGLAS CO. FR - 003 - 1(30) STATE ROUTE NO. 8 P.I. NO. 72H20 DOUGLAS CO. EXIST. IOY6 RCBC PROP DBL 6x5 RCBC STA. 62+00 STA. 72+53 BEGIN PROJECT FR-003-1(30) LIMIT OF CONSTRUCTION STA. 48+72,25 LOCATION SKETCH (N.T.S.) DESIGN DATA:URBAN END PROJECT FR-003-1(30) STA. 79+81.13 TRAFFIC A.D.T.: 14000 (1985) TRAFFIC A.D.T. 21,600 (2005) TRAFFIC D.H.V. 2000 (2005) PROP DBL IOX5 RCBC DIRECTIONAL DIST. 52% STA, 55+72.07 PLUG EXIST. IOX4 RCBC STA. 56+05 %TRUCKS 4% AUSTELL SPEED DESIGN 45 MPH PROJECT LOCATION 2/22/90 alvak Byrom APPROX. SCALE: 1" = 600" THE DATA, TOGETHER WITH ALL OTHER INFORMATION SHOWN ON THESE PLANS. OR IN ANY WAY INDICATED THEREBY, WHETHER BY DRAWINGS OR NOTES, OR IN ANY OTHER MANNER, ARE BASED UPON FIELD INVESTIGATIONS AND ARE BELIEVED TO BE INDICATIVE OF ACTUAL CONDITIONS, HOWEVER, THE SAME ARE SHOWN AS INFORMATION ONLY, ARE NOT GUARANTEED, AND DO NOT BIND THE DEPARTMENT OF TRANSPORTATION IN ANY WAY. THE ATTENTION OF THE BIDDER IS SPECIFICALLY DIRECTED TO ARTICLES 102.4, 1020, 8, AND 10403 OF THE STANDARD SPECIFICATIONS OF THE DEPARTMENT OF TRANSPORTATION, STATE OF GEORGIA, FOR THE CONSTRUCTION OF ROADS AND BRIDGES, CULRIENT EDITION AND ANY MODIFICATIONS THEREOF, WHICH WILL BE A PART OF THIS CONTRACT. LENGTH OF PROJECT DOUGLAS CO. MILES 0.589 0 0.589 0 0.589 NET LENGTH OF SRIDGES NET LENGTH OF PROJECT

Appendix E: Historic Documents





Appendix E: Historic Documents

INDEX PROJ. 41 REOPENED Sheet No. / Cover " 2 Summary " 314 Plan & Profile " 15 Ga. Std. No. 12 Pipe Culverts " 16 " " 27 Superelevation & Widening " 18 " " 27 Superelevation & Widening " 18 " " 43-8 Spillways, Center Joint, Curb " 19 " " 66 Murkers & Druits " 20 " " 73 F. A. & S. A. Project Markers " 21 " " 80 Reinf. Conc. Box Culverts " 23 " " 80 Reinf. Conc Box Culverts " 24 " " 80 Reinf. Conc Box Culverts " 24 " " 87 Cement Conc Paving Sections PROJ. 41-B Sheet No. / Cover " 2 Summary " 3 Plan & Profile " 4 Ga. Std. No. 27 Superelevation & Widening " 5 " " 43-B Spillways, Center Joint, Curb " 6 " " 73 F. A. & S. A. Project Markers " 34 & 348 Cross-sections Attach Original Cross-sections of 30-A Cobb

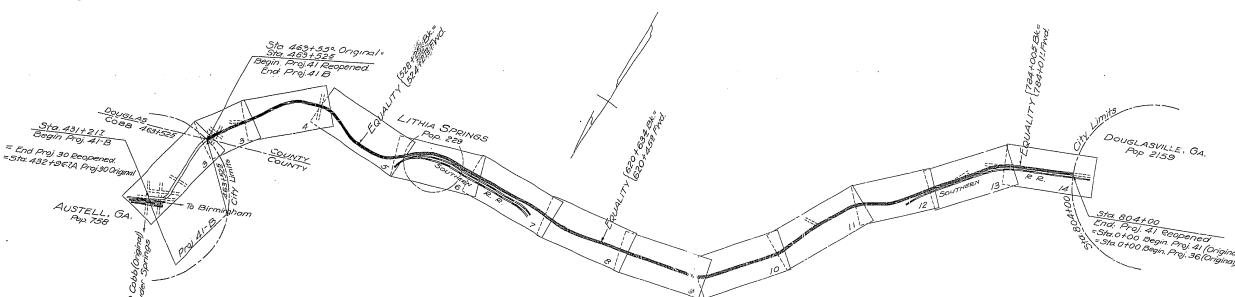
STATE OF GEORGIA
STATE HIGHWAY DEPARTMENT OF GEORGIA

PLAN AND PROFILE OF PROPOSED STATE HIGHWAY

FEDERAL AID PROJECT 41 REOPENED 41-8

AUSTELL - VILLA RICA ROAD DOUGLAS COBB COUNTY STATE ROUTE NO. 8

SCALES (PLAN 1 IN.=100 FT. (PROFIER, NOR., 1 IN.=100 FT., VERT.=1 IN.=10 FT.



LAYOUT Scale 1"=15001

No Exceptions

For Equalities See Summary Sheet

Length of Projects 41 Respensed & 41 B

Net & Gross Length of Roadway Proj. 41 Reopened=34,4683Ft;=6.528Miles

Net & Gross Length of Roadway Proj. 41 B=3230.8Ft;=0.611 Miles

7-22-30 Date B. P. M. Thorter. STATE HIGHWAY ENGINEER OF GA. SUBMITTED FOR APPROVAL

CHAIRMAN CALLO JUWAL CHARLES OF RECOMMENDED FOR APPROVAL

8 GA. 55 1930 / 47

CONVENTIONAL SIGNS | 8 GA 41-B 1930 / 7

POWER FOLE

GROUND ELEVATION

HEDGE

. TTTTTTT GRADE ELEVATION ..

MARSH

TELEPHONE OR TELECRAPH POLES .

RAISE BLEV. FOR EASEM'T OF GRADE DROP BLEV. FOR EASEM'T OF GRADE PORTON OF WAY MARKERS

F.A. PROJECT MARKERS SPILLWAYS

- CULVERTS .

STATE AND NATIONAL LINE... ____ LEVEE ...

COUNTY LINE ...

GRANT LINE

FENCE LINE 1

CITY, VILLAGE OR BOROUGH.

UNFENCED PROPERTY .

RIGHT OF WAY LINE

BASE OR SURVEY LINE....

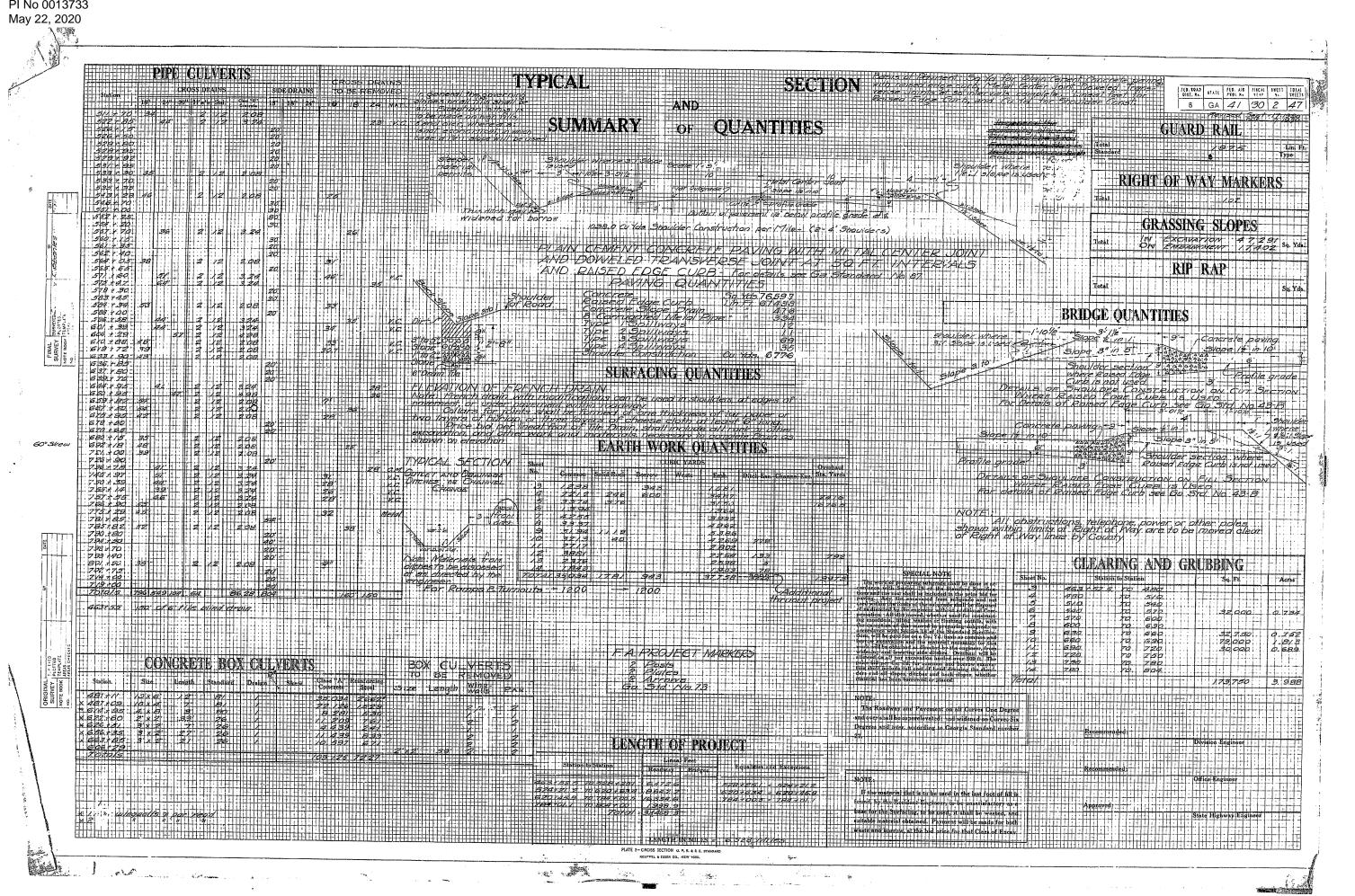
DEAT BY 7. +16 | LED | 1. 127 | 210+1. | DIV

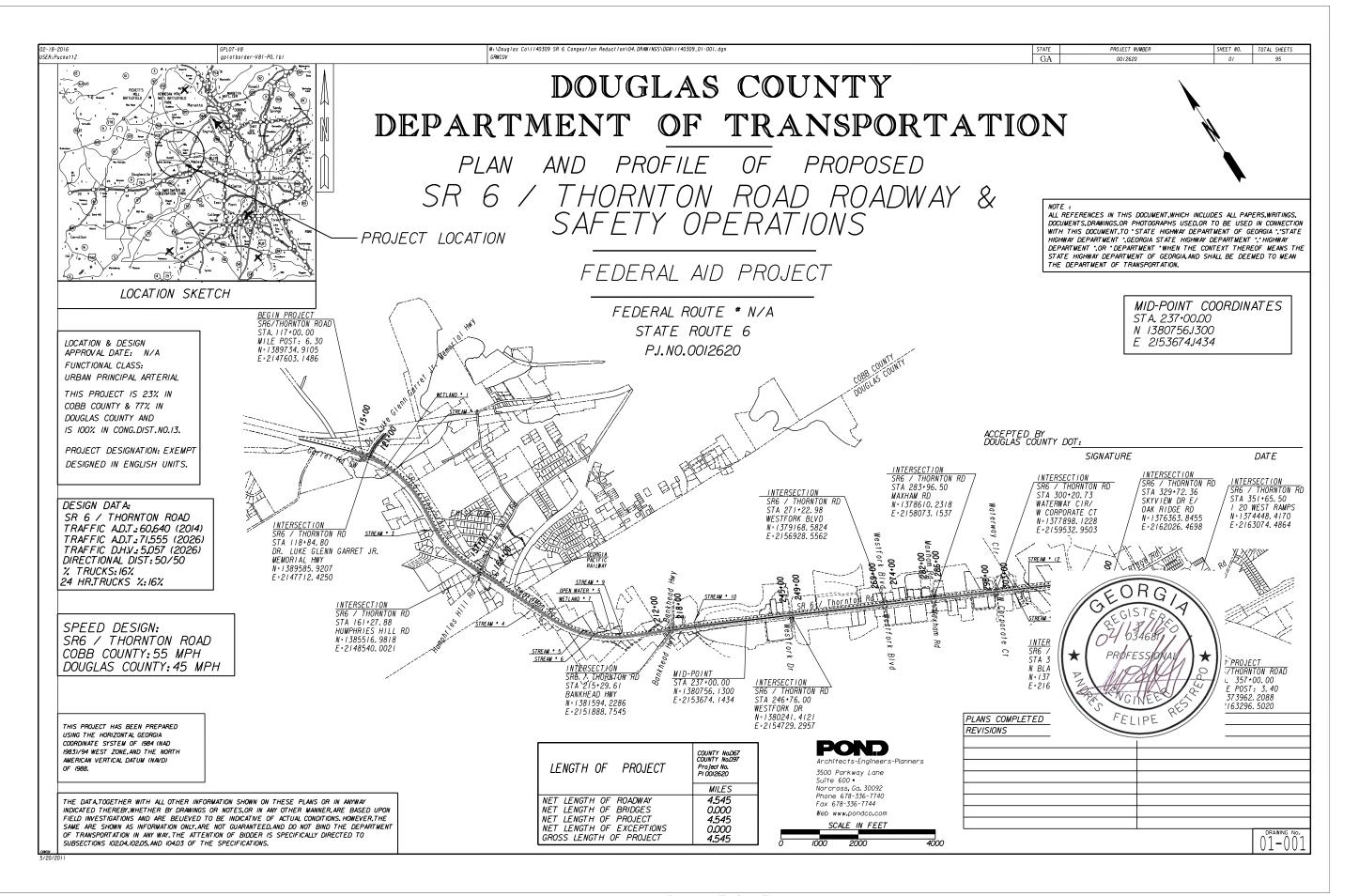
DISTRICT FAGINER PROPERTY AND COMMENDED FOR APPROVAL

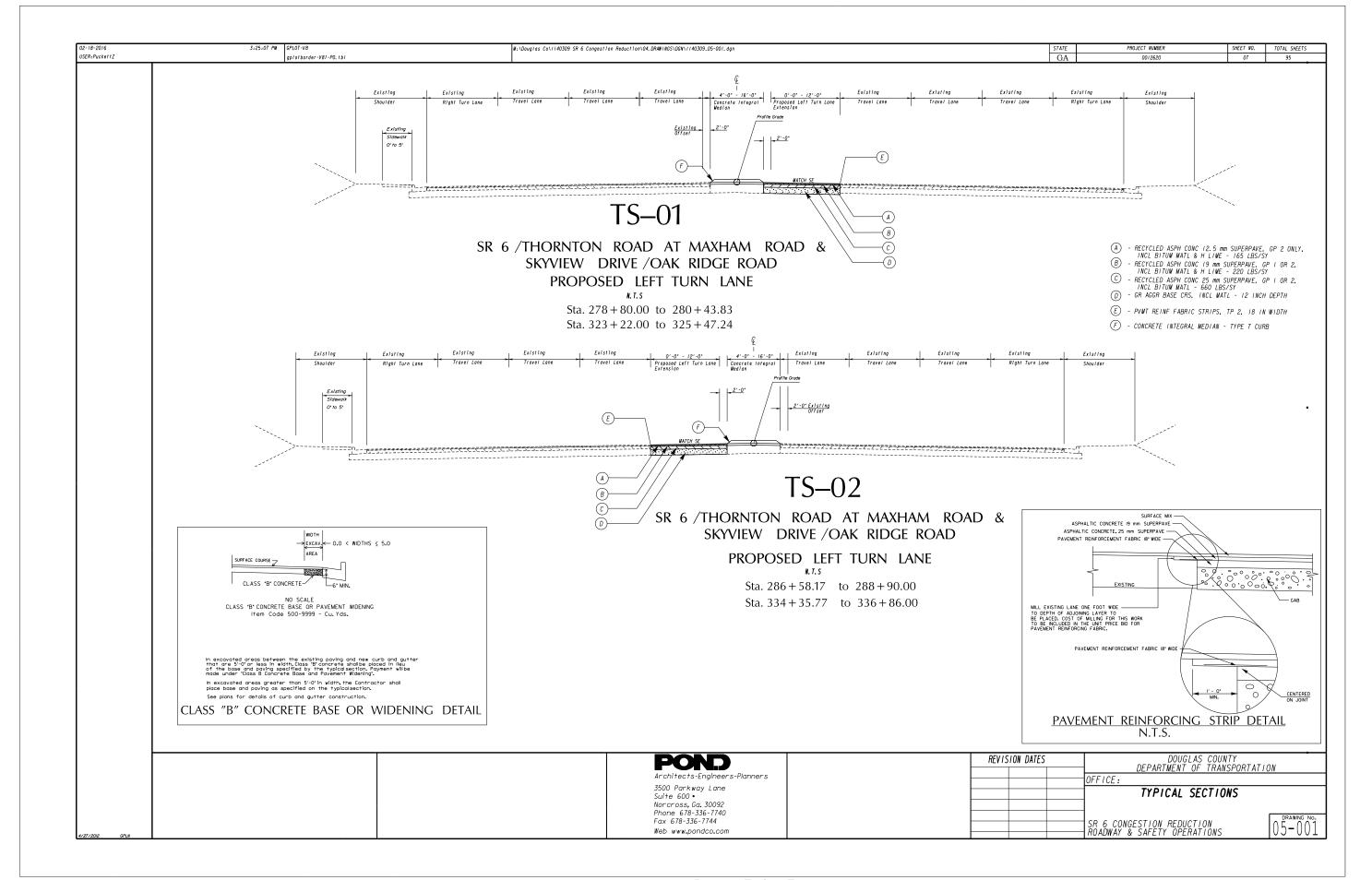
MEST NOINTEE WORLD TO SEE

SPECTOR BURGALOTE B. WAS

Plans Completed 7/19/30







P. I. NO: M004638 COUNTY: DOUGLAS

DEPARTMENT OF TRANSPORTATION STATE OF GEORGIA

PLAN OF PROPOSED P. I. NO: M004638 COUNTY: DOUGLAS

FEDERAL ROUTE: N/A STATE ROUTE: SR 6

M004638 IS LOCATED 100% WITHIN CONGRESSIONAL DISTRICT NO. 13 M004638 IS LOCATED 100% WITHIN DOUGLAS COUNTY DOUGLAS IS COUNTY NO. 097

MID-POINT COORDINATES (X,Y): (2163982.214, 1372560.887) WEST ZONE

COMPLETED PLANS: January 24, 2014

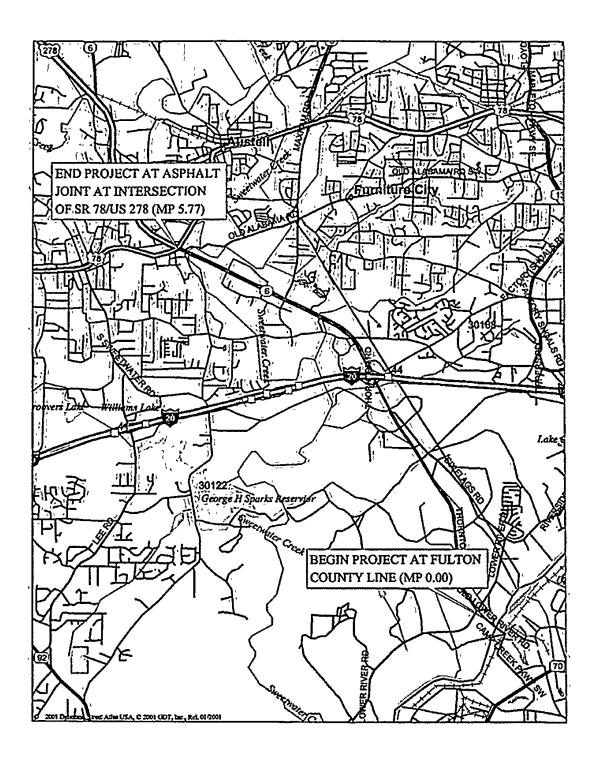
LENGTH OF PROJECT IN MILI	es e e e e e e e e e e e e e e e e e e
,	TOTAL
NET LENGTH OF PROJECT	5,660
NET LENGTH OF EXCEPTION	0.011
GROSS LENGTH OF PROJECT	5.770

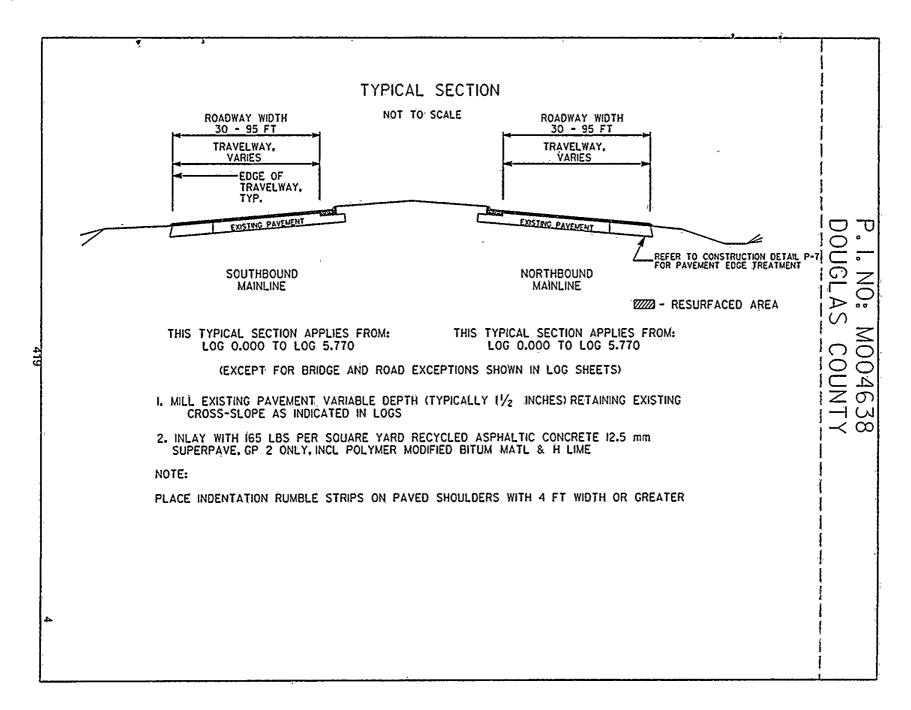
P. I. NO: M004638 COUNTY: DOUGLAS

	INDEX
1	COVER SHEET
2	INDEX
3	L'OCATION SKETCH
4-6	TYPICAL SECTION
7 – 14	ROADWAY LOG
15 – 16	DETAILED ESTIMATE
17 – 19	GENERAL NOTES
20	CONSTRUCTION DETAILS – CURB CUT (WHEELCHAIR RAMPS)
21	CONSTRUCTION DETAILS - PAVEMENT EDGE TREATMENT
22 – 30	CONSTRUCTION DETAILS – PERMANENT STRIPING AND RAISED PAVEMENT MARKERS
31	CONSTRUCTION DETAILS - LOOP DETECTORS
32	GA. STD. 9102 TRAFFIC CONTROL, 2 LANE (03-06)
33	GA. STD. 9106 TRAFFIC CONTROL, MULTI-LANE DIVIDED (09-07)
34	GA. STD. 9107 TRAFFIC CONTROL, MULTI-LANE UNDIVIDED (03-06)
35	GA. STD. 9121 TAPERS, SIGNS, AND MARKINGS FOR PASSING LANES (03-06)

P. I. NO: M004638 COUNTY: DOUGLAS

4





DEPARTMENT OF TRANSPORTATION STATE OF GEORGIA

PLAN OF PROPOSED PROJECT NO: CSNHS-M003-00(158) P.I. NO.: M003158 COUNTY: COBB/DOUGLAS

> FEDERAL ROUTE: US 278 STATE ROUTE: 6

CSNHS-M003-00(158) IS LOCATED: 30% WITHIN CONGRESSIONAL DISTRICT 6
CSNHS-M003-00(158) IS LOCATED: 70% WITHIN CONGRESSIONAL DISTRICT 11
CSNHS-M003-00(158) IS LOCATED: 82% WITHIN COBB COUNTY
CSNHS-M003-00(158) IS LOCATED: 18% WITHIN DOUGLAS COUNTY

COBB IS COUNTY NO. 067 DOUGLAS IS COUNTY NO. 097

> COMPLETED PLANS: August 12, 2005 REVISED: August 30, 2005

LENGTH OF PROJECT IN MILES

	TOTAL	COBB	DOUGLAS	
NET LENGTH OF PROJECT	6.20	5.19	1.01	8-7
NET LENGTH OF EXCEPTION	00.00	00.00	00.00	
GROSS LENGTH OF PROJECT	6.20	5.19	1.01	

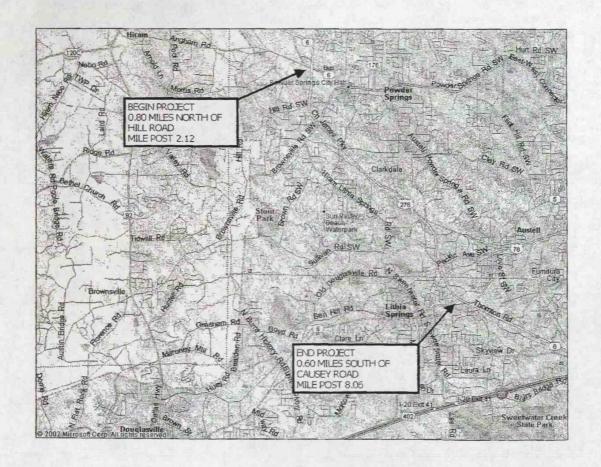
PRESENT TRAFFIC: 32,000 - 53,500 A.D.T.

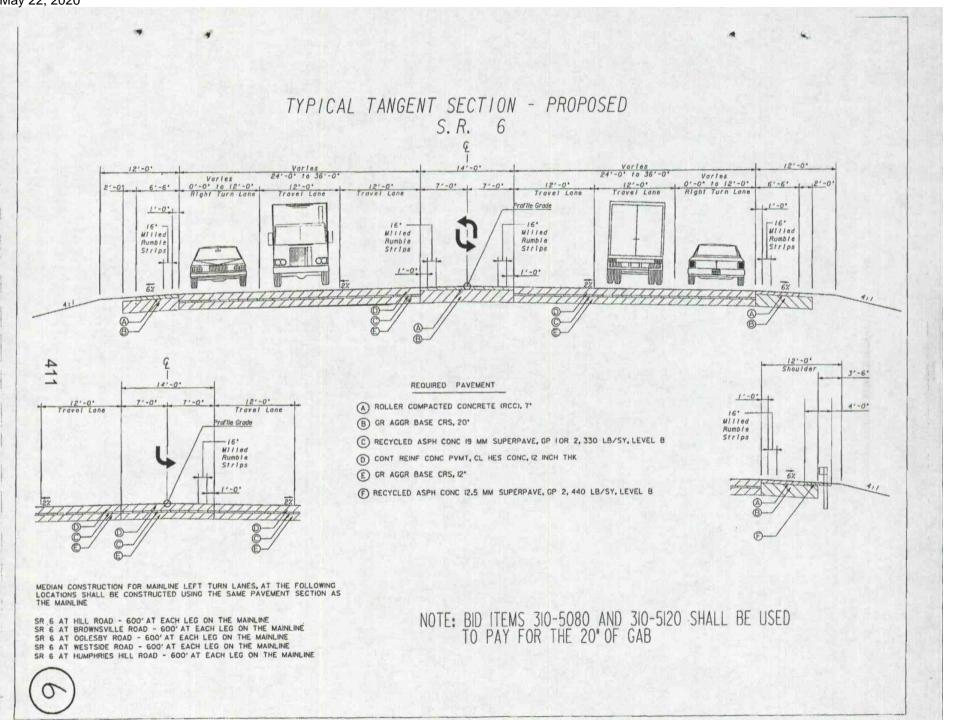
PROJECT NO: NHS-M003-00(158) COUNTY: FULTON/COBB

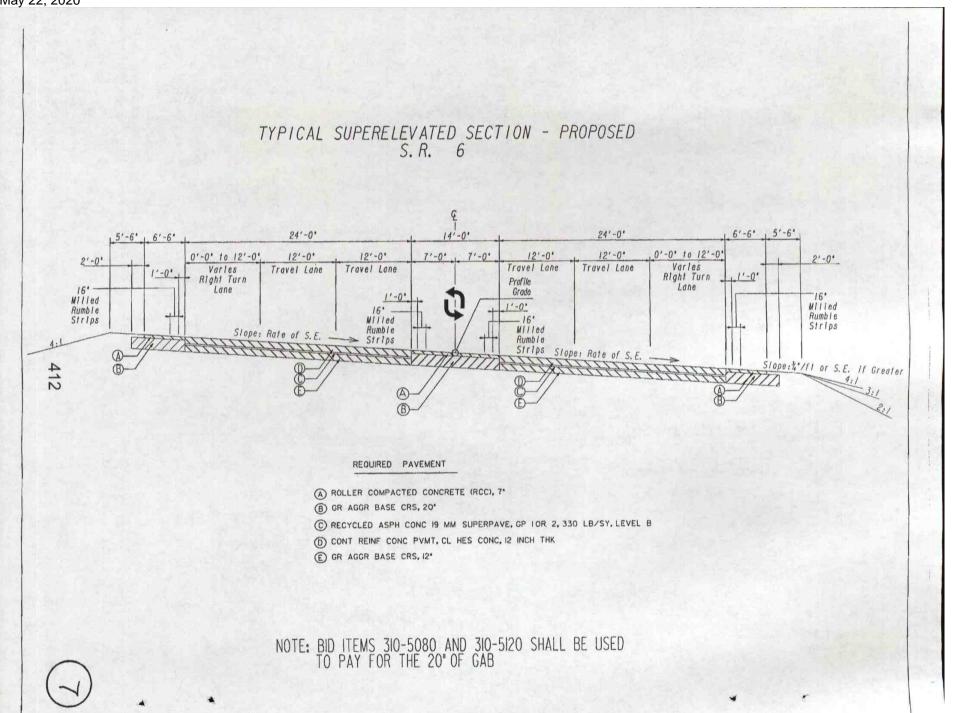
LOCATION SKETCH

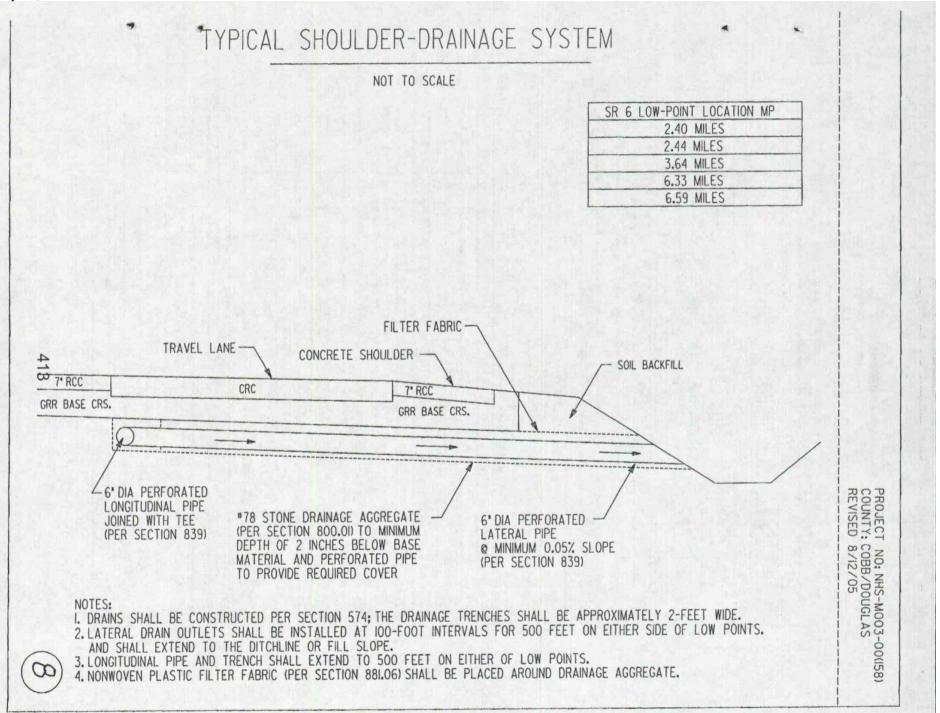
SR 6/ US 278

PROJECT NO.: NHS-M003-00(158) P.I. NO.:M003158 COBB, DOUGLAS COUNTIES





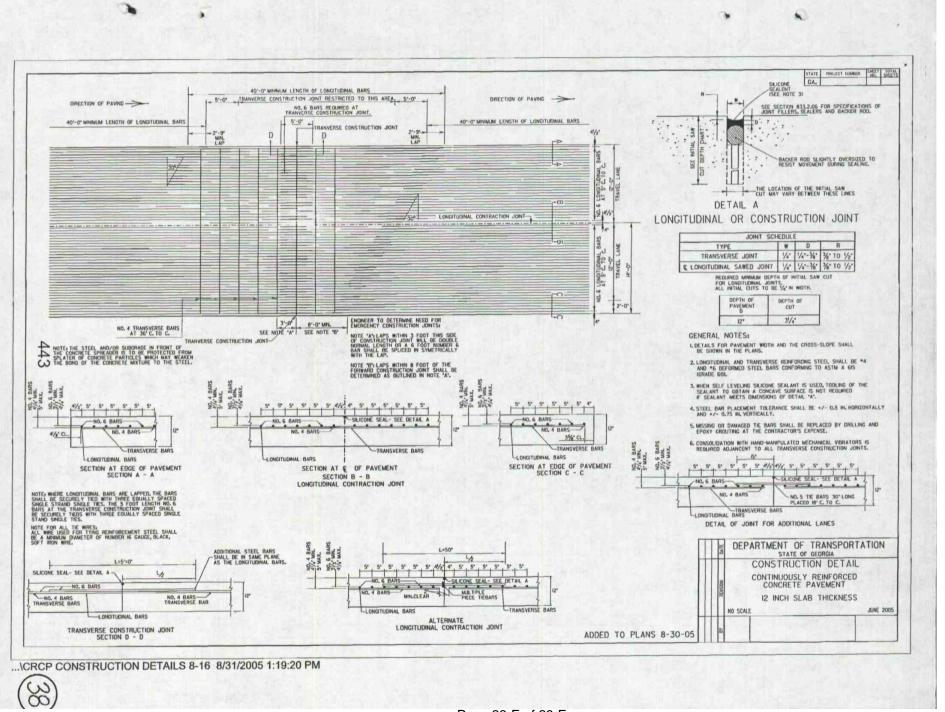


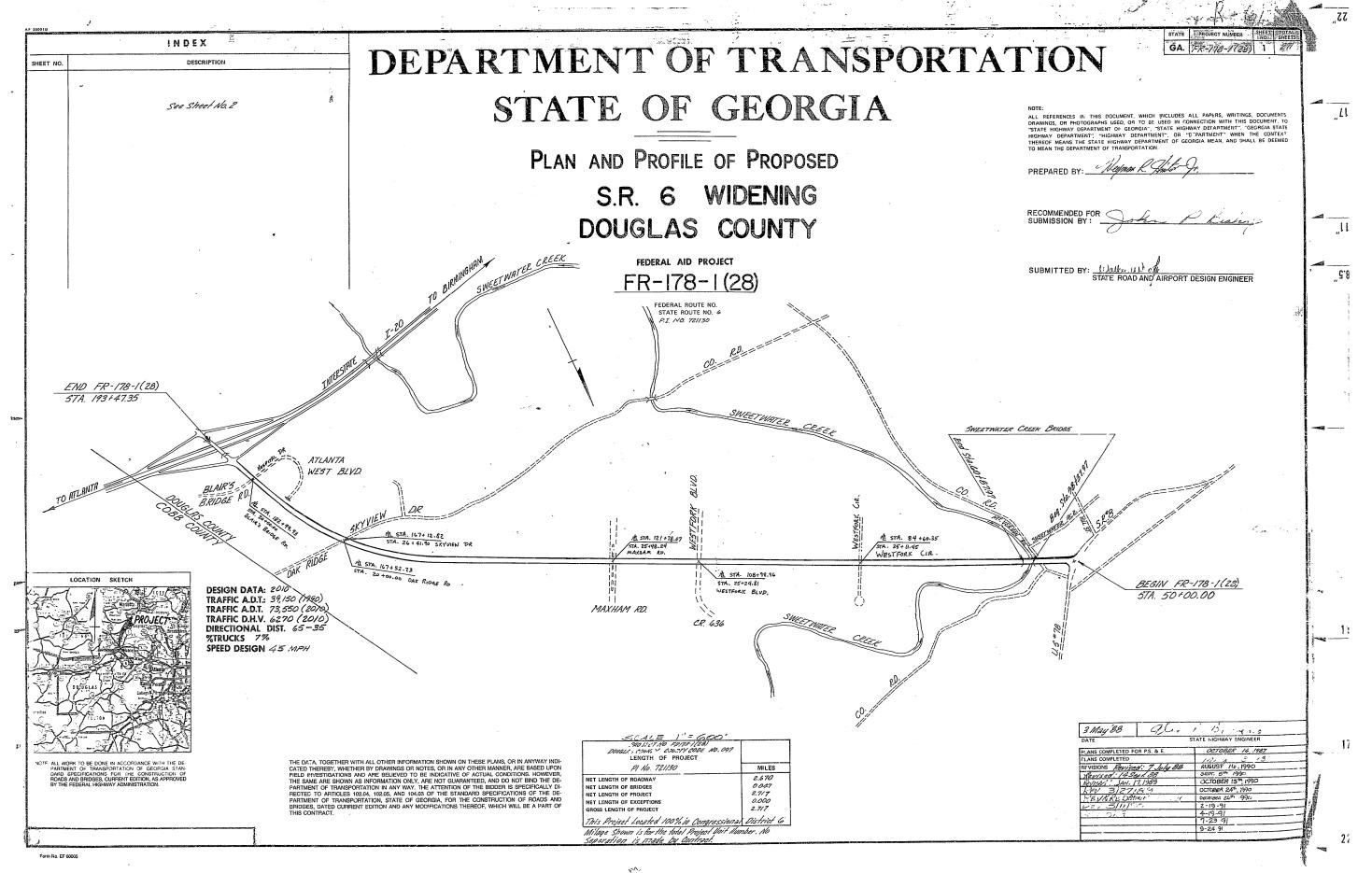


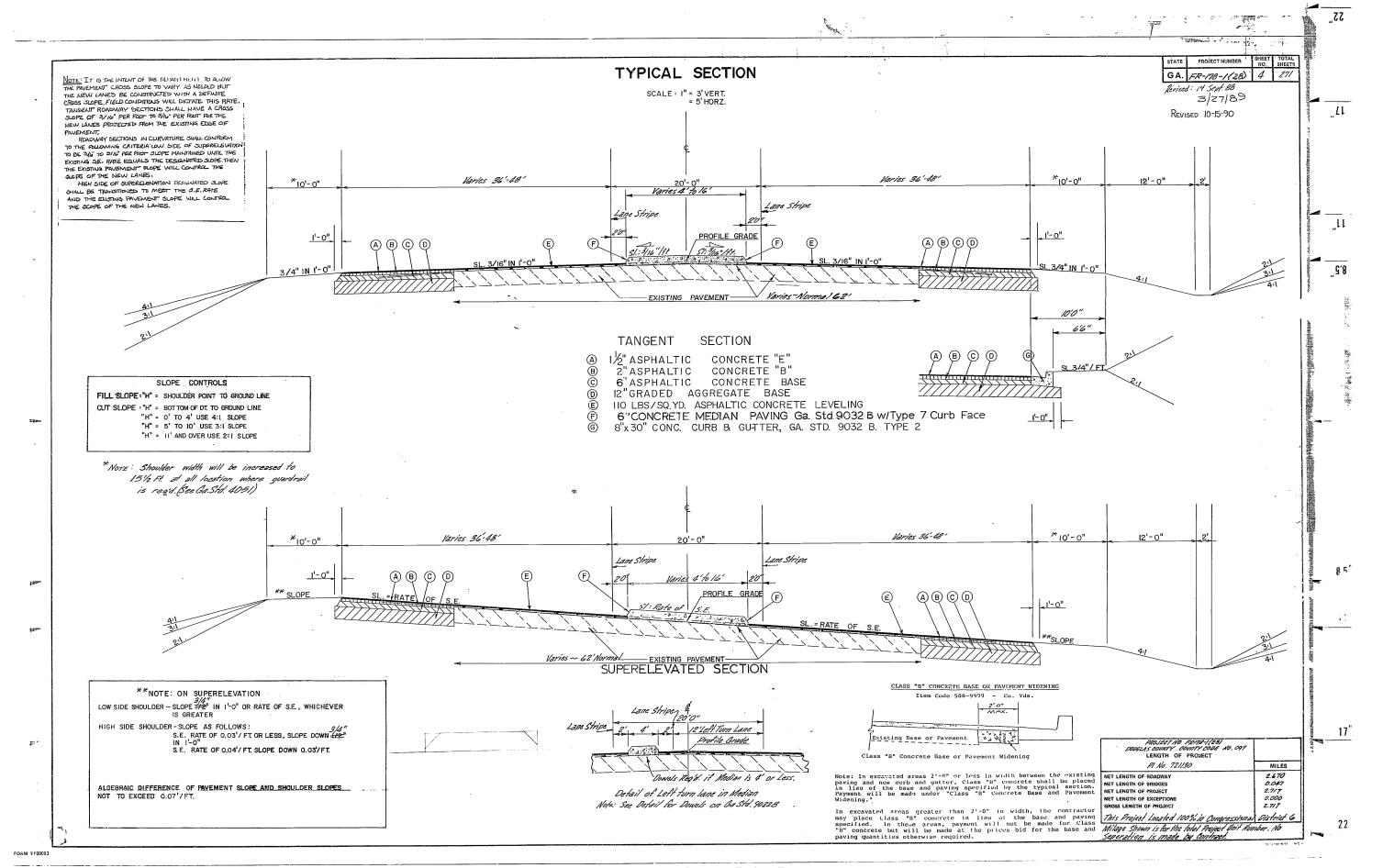
PROJECT NO: CSNHS-M003-00(158) COUNTY: COBB/DOUGLAS

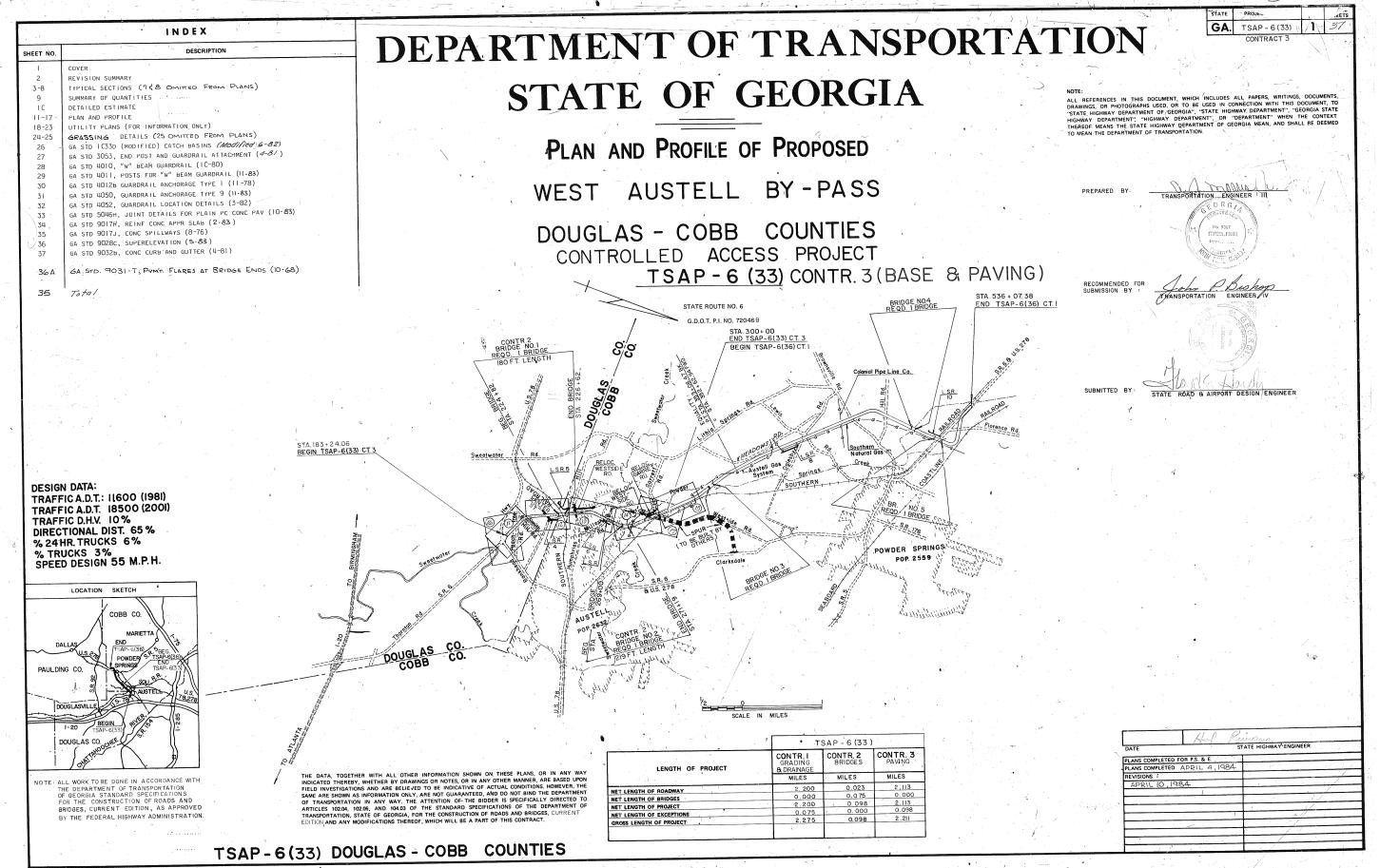
ROADWAY LOG

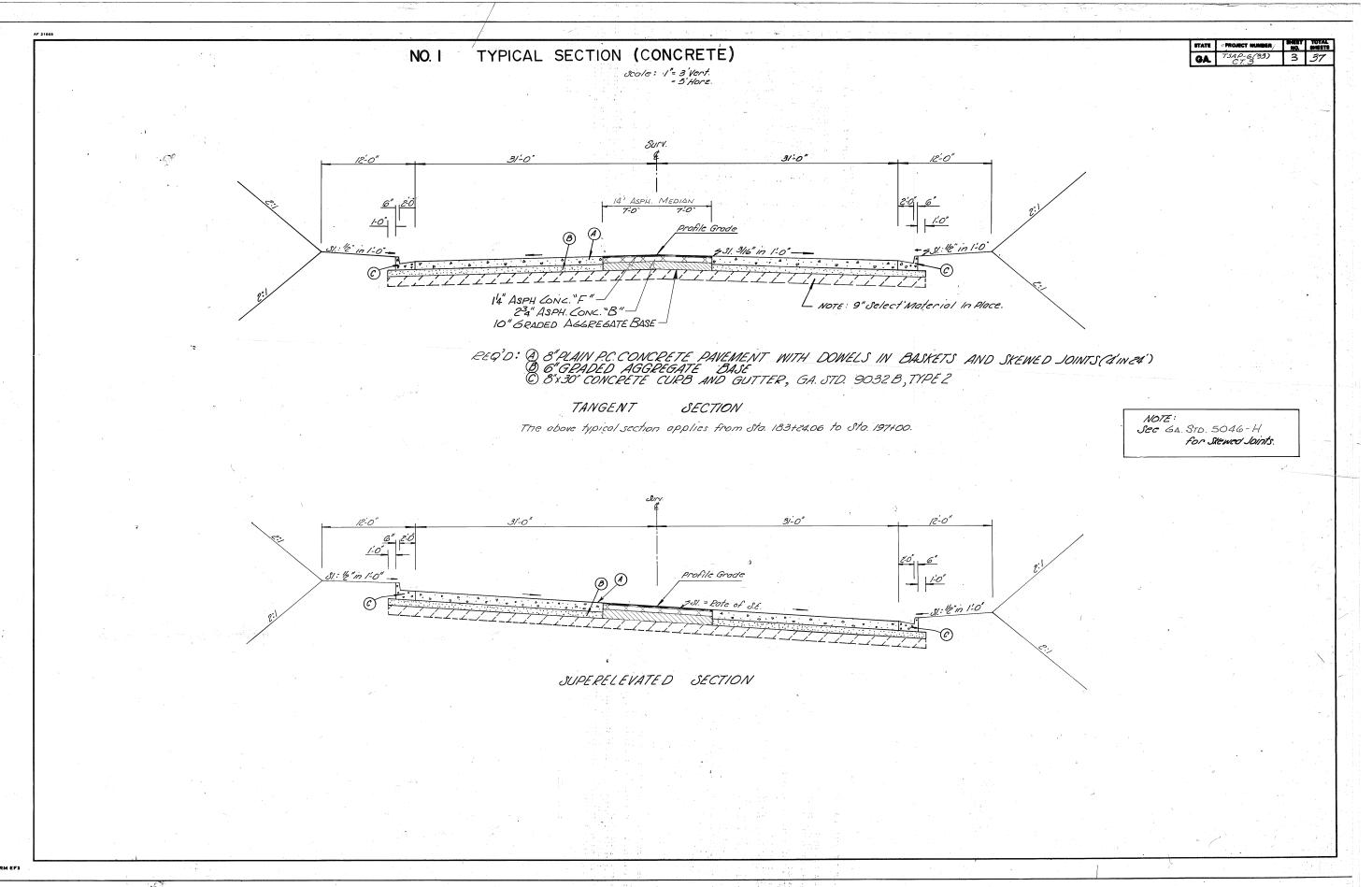
POST	DESCRIPTION	Shoulder	AD	LT	CT	RT	AD	Shoulder	Resurfacing width
2.12	Begin SR 6 CSX RR Bridge	6.5		24	14	24		6.5	75
2.41	Begin Bridge Exception								0
2.45	End Bridge Exception								0
2.45	Begin	6.5		24	14	24		6.5	75
2.72	Begin right turn lane	6.5		24	14	24	12	6.5	87
2.81	End right turn lane	6.5		24	14	24	12	6.5	87
2.82	Hill Road	6.5		24	14	24		6.5	75
2.83	Begin left turn lane	6.5	14	24		24		6.5	75
2.95	End turn lane	6.5	14	24		24		6.5	75
3.15	Begin right turn lane	6.5		24	14	24	12	6.5	87
3.26	End right turn lane	6.5		24	14	24	12	6.5	87
3.27	Brownsville Road	6.5		24	14	24		6.5	75
3.28	Begin left turn lane	6.5	14	24	14	24		6.5	89
3.4	End left turn lane	6.5	14	24	14	24		6.5	89
3.4	Begin	6.5		24	14	24		6.5	75
3.78	Begin right turn lane	6.5		24	14	24	12	6.5	87
	End right turn lane	6.5		24	14	24	12	6.5	87
	Ogelsby Road	6.5		24	14	24		6.5	75
	Begin left turn lane	6.5	14	24		24		6.5	75
	End left turn lane	6.5	14	24		24		6.5	75
	Begin	6.5		24	14	24		6.5	75
	Begin Bridge Exception								0
	End Bridge Exception								0
	Begin	6.5		24	14	24		6.5	75
		6.5	14	24		24		6.5	75
		6.5	14	24		24	12	6.5	87
		6.5	14	24		24	12	6.5	87
		6.5						6.5	75
					14		12		91
				7					75
		6.5	14	24		24		6.5	75
									0
									0
				24	14			6.5	75
									87
							12		87
					14				75
									75
			14						75
		6.5		24	14	24		6.5	75
									0
									0
									75
		6.5				24		6.5	75
0.51			24	14	24				62
0.77			24	14	24				62
	Log Length = 5.94 Miles	417	24	14	24				02
	2.41 2.45 2.45 2.72 2.81 2.82 2.83 2.95 3.15 3.26 3.27 3.28 3.4 3.78 3.91 3.94 3.95 4.07 5.17 5.23 5.23 6.04 6.18 6.27 6.28 6.28 6.29 6.28 6.29 6.29 6.20 6	2.12 Begin SR 6 CSX RR Bridge 2.41 Begin Bridge Exception 2.45 End Bridge Exception 2.45 Begin 2.72 Begin right turn lane 2.81 End right turn lane 2.82 Hill Road 2.83 Begin left turn lane 2.95 End turn lane 3.15 Begin right turn lane 3.26 End right turn lane 3.27 Brownsville Road 3.28 Begin left turn lane 3.4 End left turn lane 3.4 End left turn lane 3.5 Begin right turn lane 3.6 Begin right turn lane 3.7 Begin right turn lane 3.8 Begin left turn lane 3.9 Begin left turn lane 3.9 Coglesby Road 3.95 Begin left turn lane 4.07 End left turn lane 4.07 Begin 5.17 Begin Bridge Exception 5.23 Begin 6.04 Begin Accel lane-left 6.18 Begin right turn lane 6.27 End right turn lane 6.28 SR 6 Spur 6.28 Begin left turn lane 6.29 End left turn lane 6.40 Begin Bridge Exception 6.41 Begin Bridge Exception 6.42 End left turn lane 6.43 Begin left turn lane 6.44 Begin Bridge Exception 6.45 End Bridge Exception 6.46 Begin Bridge Exception 6.47 Begin 6.48 Begin left turn lane 6.49 Begin left turn lane 6.40 Begin Bridge Exception 6.41 Begin Bridge Exception 6.42 Begin Bridge Exception 6.43 Begin 6.44 Begin Bridge Exception 6.45 End Bridge Exception 6.46 Begin Bridge Exception 6.47 Begin Begin right turn lane 6.48 Begin Bridge Exception 6.49 Begin Begin right turn lane 6.40 Begin Begin right turn lane 6.41 Begin Bridge Exception 6.42 Begin Bridge Exception 6.43 Begin Begin right turn lane 6.44 Begin Bridge Exception 6.45 End Bridge Exception 6.46 Begin Bridge Exception 6.47 Begin Bridge Exception 6.48 Begin Bridge Exception 6.49 Begin Bridge Exception 6.40 Begin Bridge Exception 6.41 Begin Bridge Exception 6.42 Begin Bridge Exception 6.43 Begin Bridge Exception 6.44 Begin Bridge Exception 6.45 Begin Bridge Exception 6.46 Begin Bridge Exception 6.47 Begin Bridge Exception 6.48 Begin Bridge Exception 6.49 Begin Bridge Exception 6.40 Begin Bridge Exception 6.41 Begin Bridge Exception 6.42 Begin Bridge Exception 6.43 Begin Bridge Exception 6.44 Begin Bridge Exception	2.12 Begin SR 6 CSX RR Bridge 2.41 Begin Bridge Exception 2.45 End Bridge Exception 2.45 Begin 2.72 Begin right turn lane 2.81 End right turn lane 2.82 Hill Road 2.83 Begin left turn lane 2.85 End turn lane 3.15 Begin right turn lane 3.26 End right turn lane 3.27 Brownsville Road 3.28 Begin left turn lane 3.29 Begin left turn lane 3.4 End left turn lane 3.5 Begin right turn lane 3.6 Sac Begin left turn lane 3.78 Begin right turn lane 3.91 End right turn lane 3.91 End right turn lane 3.95 Begin left turn lane 4.07 End left turn lane 4.07 Begin 5.17 Begin Bridge Exception 5.23 Begin Accel lane-left 6.5 Begin right turn lane 6.5 Cac End right turn lane 6.5 End Begin Bridge Exception 6.5 End Bridge Exception 6.5 End Begin Right turn lane 6.5 End left turn lane 6.5 End left turn lane 6.5 End left turn lane 6.5 End Begin Findge Exception 6.5 End Begin Ridge Exception 6.5 End Begin Bridge Exception 6.5 End Right Exception 6.5	2.12 Begin SR 6 CSX RR Bridge 2.41 Begin Bridge Exception 2.45 End Bridge Exception 2.45 Begin 6.5 6.5 2.72 Begin right turn lane 6.5 2.81 End right turn lane 6.5 2.82 Hill Road 6.5 2.83 Begin left turn lane 6.5 14 2.95 End turn lane 6.5 14 2.95 End turn lane 6.5 3.26 End right turn lane 6.5 3.26 End right turn lane 6.5 3.28 Begin left turn lane 6.5 3.28 Begin left turn lane 6.5 3.4 End left turn lane 6.5 3.4 End left turn lane 6.5 3.4 End left turn lane 6.5 3.78 Begin right turn lane 6.5 3.91 End right turn lane 6.5 3.91 End right turn lane 6.5 3.94 Ogelsby Road 6.5 3.95 Begin left turn lane 6.5 3.95 Begin left turn lane 6.5 3.95 Begin Bridge Exception 5.23 End Bridge Exception 5.23 End Bridge Exception 5.23 Begin 6.5 3.60 Begin Accel lane-left 6.5 3.60 Begin Right turn lane 6.5 3.60 Begin Right turn lane 6.5 3.60 Begin Bridge Exception 6.5 3.60 Begin Right turn lane 6.5 3.60 Begin Right turn lane 6.5 3.60 Begin Right Exception 6.50 Begin Bridge Exception 6.50 Begin Curb and Gutter 6.50 Begin Curb and Gutter 6.50 Begin Curb and Gutter 6.50 Begin Curb and Gutte	2.12 Begin SR 6 CSX RR Bridge 2.41 Begin Bridge Exception 2.45 End Bridge Exception 2.45 Begin 3.27 Begin right turn lane 3.28 End right turn lane 3.28 Hill Road 3.29 End turn lane 3.26 End right turn lane 3.26 End right turn lane 3.27 Begin right turn lane 3.28 Begin left turn lane 3.29 End right turn lane 3.20 End right turn lane 3.21 Begin right turn lane 3.22 End right turn lane 3.23 Begin left turn lane 3.24 End right turn lane 3.25 End right turn lane 3.26 End right turn lane 3.27 Brownsville Road 3.28 Begin left turn lane 3.4 End left turn lane 3.5 14 24 3.4 End left turn lane 3.5 14 24 3.6 End right turn lane 3.7 Begin 3.7 Begin 6.5 24 3.7 Begin 6.5 24 3.9 Begin left turn lane 3.9 End right turn lane 3.9 Begin left turn lane 4.07 End left turn lane 4.07 End left turn lane 5.23 Begin 5.17 Begin Bridge Exception 5.23 Begin 6.5 24 6.24 End right turn lane 6.5 14 24 6.6 Begin Accel lane-left 6.5 14 24 6.7 End left turn lane 6.5 14 24 6.8 Begin right turn lane 6.5 14 24 6.9 Begin Bridge Exception 6.5 14 24 6.29 End left turn lane 6.5 14 24 6.5 24 6.7.08 Begin Bridge Exception 6.5 24 6.7.10 Begin Bridge Exception 6.5 24 6.7.21 Begin Bridge Exception 6.5 24 6.7.22 Begin Bridge Exception 6.5 24 6.7.25 Begin Bridge Exception 6.5 24 6.7.26 Begin Bridge Exception 6.5 24 6.7.27 Begin Bridge Exception 6.5 24 6.7.28 Begin Bridge Exception 6.5 24 6.7.19 Begin Bridge Exception 6.5 24 6.7.29 Begin Bridge Exception 6.5 24 6.7.10 Begin Curb and Gutter 6.7.10 Begin Curb and Gutter 6.7.10 Begin Curb and Gutter 6.7.11 Begin Curb and Gutter 6.7.11 Begin Curb	2.12 Begin SR 6 CSX RR Bridge 2.41 Begin Bridge Exception 2.45 End Bridge Exception 2.45 Begin 3.26 End right turn lane 3.27 Begin right turn lane 3.28 Begin right turn lane 3.29 End turn lane 3.26 End right turn lane 3.27 Brownsville Road 3.28 Begin left turn lane 3.4 End left turn lane 3.5 14 24 3.6 End right turn lane 3.6 5 24 14 3.7 Begin right turn lane 3.6 5 4 14 3.7 Begin right turn lane 3.8 Begin left turn lane 3.9 End left turn lane 3.1 Begin right turn lane 3.1 Begin right turn lane 3.2 End right turn lane 3.2 Begin left turn lane 3.4 End left turn lane 3.5 14 24 3.6 End right turn lane 3.7 Begin right turn lane 3.8 Begin right turn lane 3.9 End right turn lane 3.9 Cyclesby Road 3.9 Cyclesby Road 3.9 Begin left turn lane 3.9 End Bridge Exception 3.9 End Bridge Exception 3.9 End Bridge Exception 3.9 End right turn lane 3.0 End Bridge Exception 3.0 End Bridge Exception 3.0 End Bridge Exception 3.0 End left turn lane 3.0 End Bridge Exception 3.0 End Bridge Exception 4.0 End left turn lane 4.0 End left turn lane 5.0 End Bridge Exception 5.1 End Bridge Exception 5.2 End left turn lane 5. End Bridge Exception 5	2.12 Begin SR 6 CSX RR Bridge 2.41 Begin Rridge Exception 2.45 End Bridge Exception 2.45 End Bridge Exception 2.45 Begin 3.45 Begin 3.6.5 24 14 24 2.82 Begin right turn lane 3.5 24 14 24 2.83 Begin left turn lane 3.6.5 14 24 24 2.83 Begin left turn lane 3.6.5 14 24 24 2.95 End turn lane 3.15 Begin right turn lane 3.16 Begin right turn lane 3.17 Brownsville Road 3.28 Begin left turn lane 3.29 Begin left turn lane 3.20 Begin left turn lane 3.21 Brownsville Road 3.22 Begin left turn lane 3.23 Begin left turn lane 3.24 14 24 3.25 Begin right turn lane 3.26 End right turn lane 3.27 Brownsville Road 3.28 Begin left turn lane 3.29 Begin left turn lane 3.10 Begin right turn lane 3.20 Begin right turn lane 3.21 Begin right turn lane 3.22 Begin left turn lane 3.23 Begin left turn lane 3.24 14 24 3.5 Begin right lurn lane 3.5 14 24 14 24 3.6 Begin left turn lane 3.9 Begin Bridge Exception 3.9 Begin left turn lane 3.9 B	2.12 Begin SR 6 CSX RR Bridge 2.41 Begin Bridge Exception 2.45 End Bridge Exception 2.45 Begin 2.45 Begin 3.45 Begin 3.5 24 14 24 2.72 Begin right turn lane 3.5 24 14 24 12 2.81 End right turn lane 3.5 24 14 24 12 2.82 Hill Road 3.65 14 24 24 2.95 End turn lane 3.15 Begin right turn lane 3.26 End right turn lane 3.27 Brownsville Road 3.28 Begin left turn lane 3.28 Begin left turn lane 3.29 Begin right turn lane 3.20 End right turn lane 3.21 Brownsville Road 3.22 Brownsville Road 3.23 Begin right turn lane 3.4 End left turn lane 3.5 14 24 14 24 3.5 Begin right turn lane 3.6 5 14 24 14 24 3.78 Begin right turn lane 3.6 5 14 24 14 24 3.78 Begin right turn lane 3.78 Begin right turn lane 3.91 End right turn lane 3.91 End right turn lane 3.92 Begin left turn lane 3.93 Begin left turn lane 3.94 Ogelsby Road 3.95 Begin left turn lane 4.07 Begin 5.17 Begin Bridge Exception 5.23 Begin Accel lane-left 6.40 Begin Accel lane-left 6.5 14 24 24 6.7 End left turn lane 6.5 14 24 24 6.8 Begin right turn lane 6.5 14 24 24 6.9 Begin fight turn lane 6.5 14 24 24 6.18 Begin right turn lane 6.5 14 24 24 6.27 End left turn lane 6.5 14 24 24 6.28 Begin left turn lane 6.5 14 24 24 6.29 End left turn lane 6.5 14 24 24 6.27 End right turn lane 6.5 14 24 24 6.28 Begin left turn lane 6.5 14 24 24 6.29 End left turn lane 6.5 14 24 24 6.6 Begin Bridge Exception 6.5 24 14 24 6.7 Begin Bridge Exception 6.5 14 24 24 6.5 Begin Bridge Exception 6.5 14 24 14 6.5 Begin Bridge Exception 6.5 14 24 14	2.12 Begin BR 6 CSX RR Bridge 2.41 Begin Bridge Exception 2.45 Begin Bridge Exception 2.45 Begin m 6.5

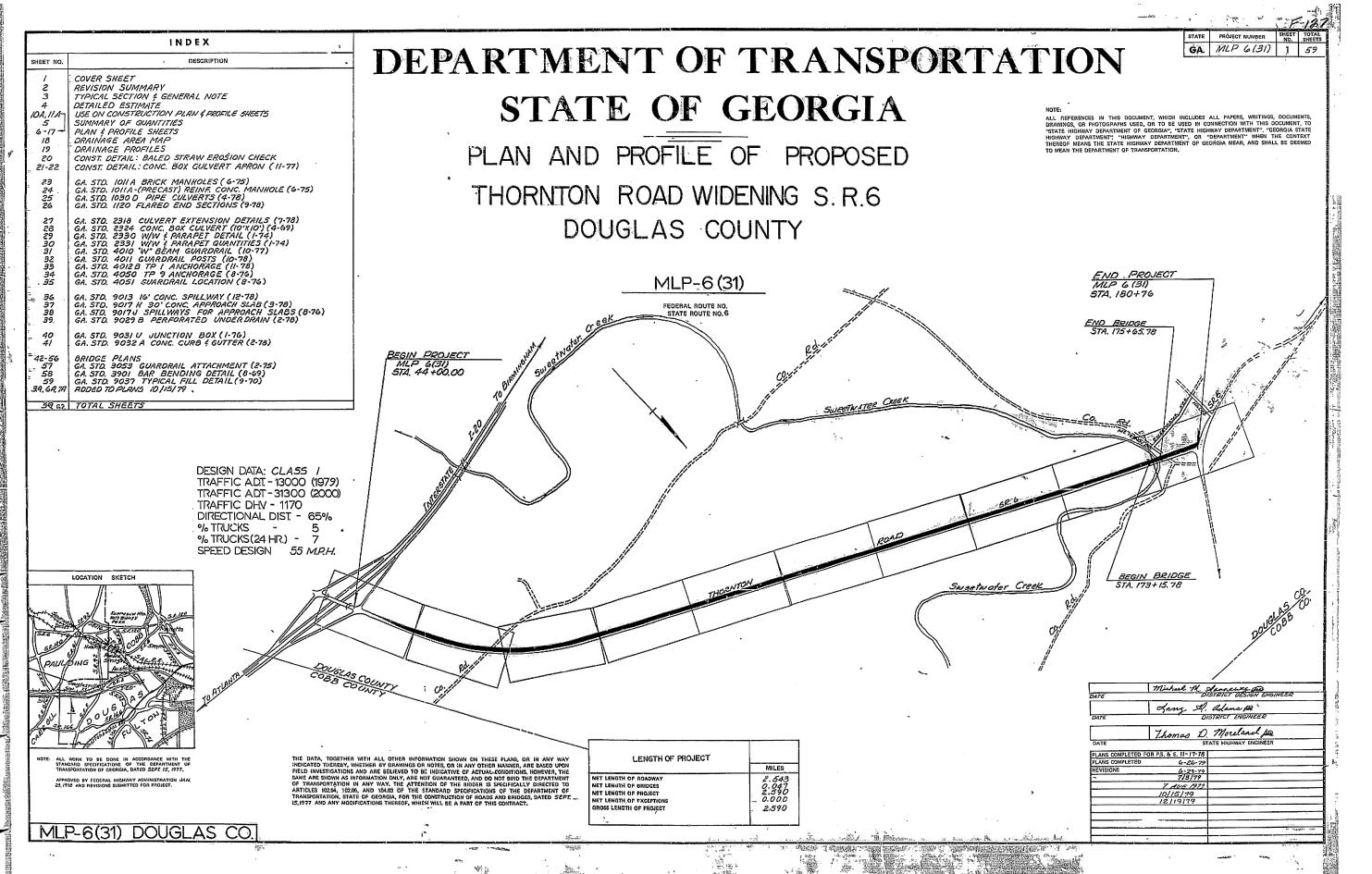












FED. ROAD DIV. NO. STATE PROJ. NO. FISCAL SHEET TOTAL NO. SHEET NO. SHEET 4 GA. MLP 79 3 59 THE CONTRACTOR WILL BE REQUIRED TO STOCKPILE APPROX. 450 TONS OF ASPHALL. PROCESS OF WIDEKING A STOCKPILE SITE WILL BE PROVIDED BY THE DOT. TYPICAL SECTION -SURVEY & CONST. E. FEATHER ASPHALTIC CONCRETE 2:0" 6:0" LEVELING COURSE 10:0" FINISH GRADE FEATHER ASPHALTIC CONCRETE "F" SHOULDER PAVING FROM 2" DEPTH AT EDGE OF PAVEMENT TO 1" DEPTH AT EXIST --EDGE OF SHOULDER 60 % a. YD. ASPHALTIC CONCRETE "D" 2" ASPRALTIC CONCRETE "B" MODIFIED 2" ASPHALTIC CONCRETE "B" MODIFIED I" ASPHALTIC CONCRETE LEVELING 6" ASPHALTIC CONCRETE "A" " I" ASPHALTIC CONCRETE 4" GRADED AGGR. BASE COURSE, 100% COMP. GHD-49 EXISTING PAVEMENT 6" GRADED AGGR. BASE COURSE 4" GRADED AGGR BASE COURSE, 96% COMP. GHD-49 TANGENT SECTION NO SCALE SCONST. & 31-6 12-0" 31:0" 10'-0" 10-6" SURVEY & 7-0" FINISH GRADE STEP 3 STEP 2 STEP 1 B'MAX B'MAX_ EXISTING PAVEMENT L*pavement* AS ABOVE. BENCHING DETAIL 1. WHERE THE EMBANGMEN. FOUNDATION IS A HILLSIDE OR ANOTHER EXISTING EMBANGMENT HAVING A SLOPE OF 3 TO 1 OR STEEPER, THE FOUNDATION MUST BE BENCHED WHILE THE EMBANGMENT IS BEING MADE. (SEE DIAGRAM ABOVE.) SUPERELEVATION SECTION 2. THE DIAGRAM SHOWS THAT BEFORE LAYER "A" IS PLACED, THE FIRST STEP (I) IS CUT INTO THE SLOPE A MAXIMUM DISTANCE OF ABOUT 8 FEET (3/4 THE WIDTH OF THE USUAL D-8 BULLDOZER BLADE) SUCCESSIVE LAYERS B.C.AND D ARE THEN PLACED, BEFORE LAYER S IS PLACED, THE SECOND STEP IS CUT 9 FEET INTO THE SLOPE AND SUCCESSIVE LAYERS ARE ASAIN PLACED, IF IT IS ANTICIPATED THAT THE VERTICAL PART OF THE STEP WILL EXCEED 4 FEET IF AN FOOT HORIZONTAL CUT IS MADE, THEN THE ACTUAL CUT STOPS WHEN THE VERTICAL PART REACHES A MAXIMUM OF 4 FEET ALLOWING NO SCALE 4-0" 310" LENGTH OF PROJECT 1 THE PROCESS OF BENCHING IS CONSIDERED INCIDENTAL TO THE ITEM OF UNCLASSI-RIED EXCAVATION AND BORROW IN THE CONSTRUCTING OF THE EMBANAMENT AND MO ADDITIONAL MEASUREMENT OF QUANTITY OR PARMENT WILL BE MADE FOR BENCHING NETLENGTH OF ROADWAY
NET LENGTH OF BAIDGES
NET LENGTH OF PROJECT.
NET LENGTH OF EXCEPTIONS
GROSS LENGTH OF PROJECT 2,543 0,017 2,590 0,000 2,590

عرب الماريد العرب الماريد العرب الماريد

...

GENERAL NOTES

- ALL OBSTRUCTIONS EXCEPT POLE LINE FACILITIES AND UNDERGROUND FACILITIES ARE TO BE MOVED TO CLEAR RIGHT OF WAY BY COUNTY OR CITY UNLESS COVERED BY A CONTRACT ITEM ALL UTILITY FACILITIES WHICH ARE IN CONFILIC WITH CONSTRUCTION. MOT COVERED AS SPECIFIC ITEMS IN THE DETAILED ESTIMATE. ARE TO BE REMOVED OR RELOCATED TO CLEAR CONSTRUCTION BY THE RESPECTIVE OWNERS UNLESS LATER ADDED TO THE CONTRACT AS A SUPPLEMENTAL ITEM.
- 2. THE CONTRACTOR WILL NOT BE PAID FOR ANY DELAYS OR EXTRA EXPENSE CAUSED BY UTILITY FACILITIES. OBSTRUCTIONS OR ANY OTHER ITEMS NOT BEING REMOVED OR RELOCATED TO CLEAR CONSTRUCTION IN ADVANCE OF THIS WORK.
- TT SHALL BE THE RESPONSTALLITY OF THE CONTRACTOR TO COORDINATE HIS WORK WITH ANY WORK TO BE PERFORMED BY WITHITY-CHMERS OR OTHERS IN ANY RECATS OF WAL SLEARNINGS AND ARRANGE A SCHEDULE OF OPERATION THAT WILL ALLOW FOR CONFLETION OF THE PROJECT
- 4. ALL KYONY TILLITY FACILITIES ARE SHOWN SCHEWATICALLY O'N HIGHWAY PLAYS. AND ARE NOT YECESSARILY ACCURATE IY LOCATIOY AS TO PLAY OR ELEVATIOY "TILLITY FACILITIES. SUCH AS SERVICE LINES OR UNKYOWN FACILITIES YOT SHOWN OY HIGHWAY PLAYS WILL YOT RELIEVE THE CONTRACTOR OF HIS RESPOYSIBILITIES WIDER THIS REQUIREMENT EXCEPT AS NOTED BELOW: "EXISTING UTILITY FACILITIES" MEANS ANY TITLITY FACILITY THAT EXISTS ON THE HIGHWAY PROJECT 14 ITS ORIGINAL, RELOCATED, OR NEWLY INSTALLED POSITION.
- 5. THE CONTRACTOR WILL NOT BE HELD RESPONSIBLE FOR THE COST OR REPAIRS TO DAMAGED UNDER GROUND UTILITY FACILITIES. OTHER THAN SERVICE LINES FROM STREET MAINS TO ABUTTING PROPERTY. WHEN SUCH FACILITIES ARE NOT SHOWN ON THE HIGHWAY PLANS AND THEIR EXISTENCE IS UNKNOWN TO THE CONTRACTOR PRIOR TO DAMAGES OCCURING. PROVIDING THE ENGINEER DETERMINES THE CONTRACTOR HAS OTHERWISE FULLY COMPLIED WITH THE SPECIFICATIONS
- 6. THE FOLLOWING KNOWN UTILITY OWNERS HAVE FACILITIES WITHIN THE LIMITS OF THE PROJECT AND MAY BE IN CONFLICT WITH THE PROPOSED CONSTRUCTION OR THEY MAY INSTALL NEW FACILITIES CONCURRENTLY WITH THE CONSTRUCTION WORK DOUGLAS COUNTY EM.C.

SOUTHERN SELL TELEPHONE & TELEGRAPH CO.
6133 LOVE ST.
AUSTELL GA. 30001

RO. BOX 897 DOUGLASVILLE GA. 30134

GA. POVER CO. 800 BROAD ST. ROME GA. 30161

COLONIAL PIPELINE CO. 6075 ROSWELL RD. ME. ATLANTA GR. 30328

ATLANTA GAS LIGHT CO. PO. BOX 1456 ATLANTA GA 30302

AUSTELL GAS CO. RO.BOX 485 AUSTELL GA. 30001

OOUGLAS COUNTY WATER SYSTEM RO. BOX 1136 DOUGLASVILLE GA. 30134

- 7. THE TOTAL ACRES SHOWN ON THE PLANS FOR CLEARING AND GRUBBING ARE FOR INFORMATION ONLY THE DEPARTMENT OF TRANSPORTATION ASSUMES NO RESPONSIBILITY FOR ITS ACCURACY THE CONTRACTOR SHALL BID ON CLEARING AND GRUBBING. LUMP SUM AND IT SHALL BE HIS RESPONSIBILITY TO DETERMINE THE ACRES TO BE CLEARED AND GRUBBED. "NO CLEARS SHALL BE CONSIDERED FOR EXTRA COMPENSATION IF THE CONTRACTOR MELIES ON THE ACRES SHOWN ON THE PLANS
- 8. ALL TERS WHICH MUS' BE REMOVED DURING CONSTRUCTION AND ARE NOT SPECIFICALLY SHOWN TO BE PAID FOR OTHERWISE. ARE TO BE REMOVED WITH PAYMENT INCLUDED IN THE PRICE BIO FOR CLEARING AND GRUBBING. INCOMBUSTIBLE MATERIALS THAT CANNOT BE PLACED IN EMBANMENTS SHALL BE DISPOSED OF A ACCORDANCE WITH STANDARD SPECIFICATIONS EXCEPT INAT MASTE REAL SHALL BE PROVIDED OFF THE RIGHT OF WAY AT THE CONTRACTORS EXPENSE AS PART OF THIS PAY ITEM.
- 9. THIS ENTIRE PROJECT IS CONSIDERED TO BE WITHIN THE LIMITS OF AN INSECT INFESTED AREA
- ++ SHALE BE THE RESPONSIBILITY OF THE CONTRACTOR TO FURTHER SUITABLE AND APPROVED BORROY
- ALL DPIVERAYS WHEPE ACCESS IS ALLOWED SHALL BE PLACED AS DIRECTED BY THE ENGINEER AND 14 ACCUPDANCE WITH RULES AND REGULATIONS FOR CONTROL AND PROTECTION OF STATE RIGHTS OF WAY ADOPTED BY THE STATE TRANSPORTATION BOARD. EFFECTIVE FEB.17, 1977
- 12 YO GUAPDRAIL SHALL BE 195TALLED 199TIL GRADING IS COMPLETE AND SITE INSPECTION MADE BY REPRESENTATIVES OF THE DEPARTMENT OF TRANSPORTATION
- 13. TRAFFIC COYTROL DEVICES WILL BE USED OY ALL WORK ON THIS PROJECT IN ACCORD WITH "THE GEORGIA MAYUAL ON UNIFOR" TRAFFIC COYTROL DEVICES FOR STREETS AND HIGHWAYS".

 CURRENT EDITION
- 14. THE TOTAL AREA SHOWN OF THE PLAYS FOR GRASSING IS FOR INFORMATION ONLY. THE DEPARTMENT OF TRANSPORTATION ASSUMES NO RESPONSIBILITY FOR ITS ACCURACY. THE CONTRACTOR SHALL BID ON GRASSING LUMP SUM, AND IT SHALL BE HIS RESPONSIBILITY TO DETERMINE THE ACTUAL AREA TO BE GRASSED. NO CLAYAS WILL BE CONSIDERED FOR EXTRA COMPENSATION IF THE CONTRACTOR RELIES ON THE APPEAS SHOWN BY THE MEDICAL PROPERTY.
- 15. ALL SAWED JOINTS FOR DRIVEWAY AND STREET TIE-INS WILL BE CONSIDERED INCIDENTAL AND INCLUDED IN THE PRICE OF OTHER ITEMS.
- ALL PERMANENT SIGNING AND STRIPING SHALL BE DONE BY MAINTENANCE FORCES. ALL TEMPORARY SIGNING AND STRIPING SHALL BE PERFORMED BY THE CONTRACTOR.
- 17. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO ACCULRE SUITABLE BORROW PITS TOR REQUIRED BORROW. MATERIALS & RECLAMATION, OF SAME.

PAVED DITCH DETAIL

STA 73+50 TO 77+57 LEFT STA, 115+50 TO 118+50 LEFT

Appendix F: Visual Distress Photos



0699: SR 5 Northbound North Leg; Approximate location of quadrant loop entrance



0701: SR 5 Eastbound East Leg; Level 1 Block Cracking

Appendix F: Visual Distress Photos SR 5 @ SR 6, Douglas County PI No. 0013733



0703: SR 5 Eastbound East Leg; Level 1 Block Cracking



0705: SR 5 Eastbound East Leg; Level 2 Block Cracking



0706: RT Lane-SR6NB toSR5EB; Level 2 Block Cracking



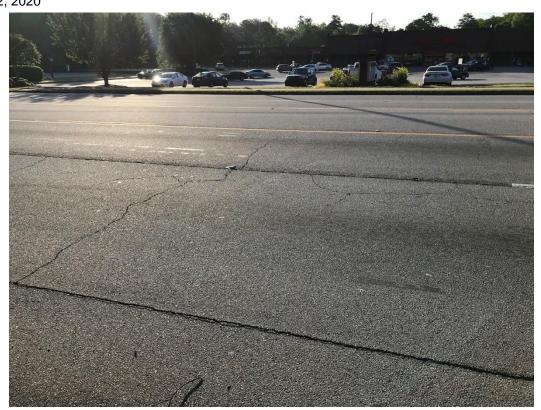
0713: SR 5 Westbound East Leg



0714: SR 5 Westbound East Leg; Level 3 Load Cracking and Rutting



0715: SR 5 Westbound East Leg; Patch and Level 1 Transverse Cracking



0717: SR 5 Westbound East Leg; Level 1 Transverse Cracking



0719: SR 5 Westbound East Leg; Level 1 Block Cracking



0720: SR 5 Westbound East Leg; Level 2 Transverse Cracking Approximate location of quadrant loop entrance



0707: SR 6 Northbound South Leg



0709: SR 6 Northbound South Leg; Pothole-Cold Patched



0710: SR 6 Northbound South Leg (Sweetwater Creek Bridge Approach); Pothole and Probable Reflective Crack



0712: SR 6 Northbound South Leg; Level 2 Transvers Cracking in turn lane



0758: SR 6 Southbound South Leg; Rutting, Potholes-Cold Patched, Level 3 Load Cracking



0762: SR 6 Southbound South Leg; Level 1 Block Cracking



0763: SR 6 Southbound South Leg (Sweetwater Creek Bridge Approach); Probable Reflective Crack



0738: SR 5 Westbound West Leg



0739: SR 5 Westbound West Leg; Level 3 Block Cracking



0742: SR 5 Westbound West Leg; Level 1 Transverse and Load Cracking



0743: SR 5 Eastbound West Leg; Level 4 Load Cracking



0744: SR 5 Eastbound West Leg; Level 4 Load Cracking



0748: SR 5 Eastbound West Leg; Level 3 Block Cracking and Pothole



0752: SR 5 Eastbound West Leg; Level 3 Block Cracking and Construction Joint



0754: SR 5 Eastbound Leg; Rutting and Level Load Cracking



0721: SR 6 Northbound North Leg



0722: SR 6 Northbound North Leg; Construction Joint and Shoving



0723: SR 6 Northbound North Leg; Transverse Cracking (CRCP)



0725: SR 6 Northbound North Leg; Approximate location of quadrant loop entrance

Appendix F: Visual Distress Photos SR 5 @ SR 6, Douglas County PI No. 0013733



0729: SR 6 Southbound North Leg; Level 1 Transverse Cracking



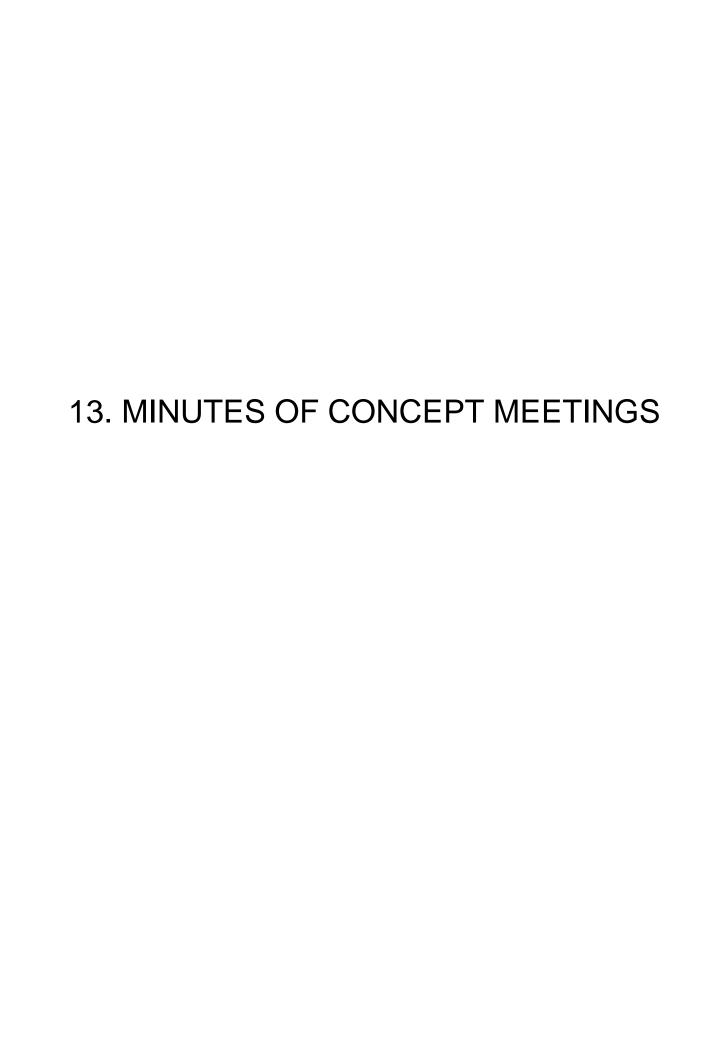
0730: SR 6 Southbound North Leg; Construction Joint, Potholes-Cold Patched, Shoving



0732: SR 6 Southbound North Leg; Pop-out-Epoxy Filled (CRCP)



0736: SR 6 Southbound North Leg



Meeting Sign-In Sheet

Project: PI 0013733-SR 5/US 78 at SR 6/US 278

Date: May 22, 2020

Location: MS Teams

Purpose: Concept Team Meeting

Name	Organization	Phone	Email
Davida White	GDOT-OPD; Project Manager	404-631-1530	dwhite@dot.ga.gov
Merishia Robinson	GDOT-OPD; D7A Program Manager	404-631-1710	mrobinson@dot.ga.gov
Felicia Pennyman	GDOT-D7 ROW	770-216-3965	fpennyman@dot.ga.gov
Megan Weiss	GDOT-Planning	404-631-1779	mweiss@dot.ga.gov
Joshua Higgins	GDOT-D7 Planning and Programming Coordinator	404-216-3896	johiggins@dot.ga.gov
Paul DeNard	GDOT - D7 Preconstruction	770-216-3890	pdenard@dot.ga.gov
Brandon Smith	SyncGlobal Telecom	678-794-8281	brandon_smith@syncglobal.net
Andrea Wahl	GDOT-OES, Ecology	770-715-7596	awahl@dot.ga.gov
Andrew Pearson	GDOT-TMC-Traffic Ops	404-635-2859	apearson@dot.ga.gov
Lily Hardman	GDOT - Roadway Design	404-631-1676	lhardman@dot.ga.gov
Keisha Jackson	GDOT-OES, NEPA	678.247.2470	keijackson@dot.ga.gov
Sam Carter	GDOT-OES, History	678-581-3474	SCarter@dot.ga.gov
Aaron Ladina	GDOT Office of Roadway Design	404-631-1655	ALadina@dot.ga.gov
Aaron Burgess	GDOT-OES, NEPA	404.800.0589	aaburgess@dot.ga.gov
Krystal Stovall-Dixon	GDOT-OPD	404-631-1572	kstovall-dixon@dot.ga.gov
Fredricka Jackson	GDOT D7 ROW	770-216-3832	fjackson@dot.ga.gov
Albert Shelby	GDOT-Director of Program Delivery	404-631-1758	ashelby@dot.ga.gov
Justin Hatch	GDOT D7 Traffic Ops	404-858-0459	juhatch@dot.ga.gov
Steven Boockholdt	GDOT ROADWAY DESIGN	404-631-1770	SBoockholdt@dot.ga.gov
Janique Jenkins	District 7 Utilities	470-553-1979	jajenkins@dot.ga.gov
Shun L Pringle	District 7 Utilities		springle@dot.ga.gov
Migual Baca	Douglasville Douglas County Water		mbaca@ddcwsa.com
Daniel Tilden	Georgia Power Distribution		DTILDEN@southernco.com
Lee Upkins	Jacobs- Construction Project Manager		LUpkins@dot.ga.gov
Ernest Howell	GDOT	404-507-3445	ehowell@dot.ga.gov
Lewis Brooker	GDOT-Utilities	770-216-3912	lbrooker@dot.ga.gov

OPD PROJECT MANAGER CONCEPT TEAM MEETING AGENDA AND MINUTES PI Number 0013733, Douglas County SR 5/US 278 @ SR 6/US 78 – Quadrant

Date: May 22, 2020 Time: 10:00 AM Location: MS Teams

- 1. WELCOME Project Manager
- 2. INTRODUCTION OF EACH ATTENDEE Initiated by Project Manager
- 3. PROJECT IDENTIFICATION Project Manager
- 4. PROJECT SCHEDULE Project Manager
 - Concept Report Approval- 7/31/20
 - PFPR- 10/14/21
 - ROW Authorization- 1/14/20
 - FFPR- 9/1/22
 - Let- 4/15/23
- 5. POWERPOINT PRESENTATION Design Phase Leader

DISCUSSION BY DISIPLINE:

- 6. PLANNING
 - o **Project Justification Statement-**No comments
 - o Traffic Projections
 - Traffic data and projections have been approved however they reflect the previous CFI design. The PM will request traffic updates for the proposed Quadrant design

7. STATE OR DISTRICT RIGHT OF WAY

 Question as to whether to keep limited access. Traffic Ops wants to leave the limited access. The design team will look further into it.

8. ENVIRONMENTAL

o **NEPA**

Remove GEPA-Type B and replace with no document

o **HISTORY**

CONCEPT TEAM MEETING AGENDA/MINUTES

PI Number 0013733, Douglas County SR 5/US 278 @ SR 6/US 78 – Quadrant May 22, 2020

Page 2 of 3

-Additional historic resources in connecting project (PI 0010821) found on South Memorial Highway are to be included in the concept report. Resources include a cemetery, house, and gas station that is now a Pep Boys.

o ECOLOGY

- Additional streams and wetlands are to be listed in the concept report.
- Ecologist to provide a list to the design team.

o AIR/NOISE

- Noise analysis required, and screening level needed for air

ARCHAEOLOGY

- Archaeologist provided notes prior to the meeting that will be sent to the design team for inclusion in the concept report.

COMMUNITY RESOURCES

- OES concurs with community resources listed in the report. USACE involvement needed.
- Question about logical termini and endpoints. Designer mentioned the proposed Quadrant design endpoints are reflected better than the previous CFI design.

o **PERMITS**

- 404 permit dependent on the linear foot of stream impacts.
- An IP will be needed if stream impacts are extreme.
- Buffer Variance is required.

UNDERGROUND STORAGE TANKS/HAZARDOUS WASTES

- Phase I needed at gas stations and Phase II is dependent on impacts of ROW.

9. UTILITIES

- Two transmission lines located in the NW quadrant and may require additional ROW.
- O Utility funding phase needs to be added to the project.
- O Water/Sewer has an 8, 12, and 20-inch waterline in the area.
- o Design will utilize SUE to address existing utilities.
- Public Interest Determination (PID) may be considered for Douglas County Water
- Utility Concept report was forwarded to the design team for inclusion in the report this morning prior to the meeting.

10. LOCAL GOVERNMENT AGREEMENTS

o Agreements and Lighting not required.

CONCEPT TEAM MEETING AGENDA/MINUTES PI Number 0013733, Douglas County SR 5/US 278 @ SR 6/US 78 – Quadrant May 22, 2020 Page 3 of 3

11. OFFICE OF PROGRAM DELIVERY COMMENTS

 Question about the concept report being submitted according to the baseline submittal date, 5/27/20. The design team and PM will coordinate on the submittal.

12. OFFICE OF ROADWAY DESIGN COMMENTS

- Question about the preferred alternate impacts to the connecting project PI 0010821in comparison to the original CFI design. The design team stated, the preferred alternate will better accommodate the adjacent project.
- The PM manages both projects (0013733 and 0010821) and will ensure the appropriate coordination takes place.
- Question about design team looking at special advance signs for navigation through the quadrant. The design team will be using appropriate signs.
- o Traffic Operations asked to look at two signals to be warranted.

13. STATE OR DISTRICT TRAFFIC OPERATIONS COMMENTS

- Question concerning the need for special vehicle accommodations due to truck traffic in the area. OPD does not anticipate the need.
- The project will be designed for WB 67 to accommodate adjacent project (0010821).
- o ICE approval for the project will be completed after the Office of Traffic Operations signs the concept report.

14. ADDITIONAL COMMENTS & CONCERNS FROM ATTENDEES

 Concerns about limited access as it limits utility companies from having access to relocate utilities. The design team will address limited access after SUE plans are completed.